

**Investigating the association between the reconciliation quality
of EBITDA disclosure by JSE-listed companies and factors
associated with opportunistic disclosure**

by

MATTHEUS THEODORUS MEY

Thesis presented in fulfilment of the requirements for the degree
Master of Accounting (Financial Accounting)
at Stellenbosch University



Supervisor: Dr C. Lamprecht
Faculty of Economic and Management Sciences
School of Accountancy

April 2019

DECLARATION

By submitting this thesis electronically, I declare that the entirety of the work contained therein is my own, original work, that I am the sole author thereof, that reproduction and publication thereof by Stellenbosch University will not infringe any third party rights and that I have not previously in its entirety or in part submitted it for obtaining any qualification.

April 2019

Copyright © 2019 Stellenbosch University

All rights reserved

ABSTRACT

This study sought to determine whether the Johannesburg Stock Exchange (JSE) and the International Accounting Standards Board (IASB) should specify explicit disclosure requirements regarding the format of reconciliations between adjusted International Financial Reporting Standards (IFRS) earnings, referred to as non-GAAP earnings, and IFRS earnings. The disclosure of non-GAAP earnings is linked to both decision-usefulness and earnings management. As a form of earnings management, company management may disclose non-GAAP earnings in such a manner as to influence users' perceptions of company performance in order to attain their own opportunistic goals. If reconciliations between non-GAAP earnings and IFRS earnings are of a high quality, the risk of opportunistic disclosure is limited and decision-useful information enabled. Focusing on earnings before interest, tax, depreciation and amortisation (EBITDA), the following research question was addressed: Are companies less likely to disclose higher quality reconciliations between EBITDA and IFRS earnings when factors linked to opportunistic disclosure are present?

The quality of reconciliations between EBITDA and IFRS earnings, as included in the Stock Exchange News Service (SENS) reports of JSE-listed companies for the financial years 2014 to 2016, were determined. Ordinary least squares estimation was used to regress the EBITDA reconciliation score on three factors linked to opportunistic disclosure, namely: whether greater emphasis is placed on EBITDA than IFRS earnings; whether EBITDA is positive when IFRS earnings are negative; and whether invalid adjustments were made in deriving EBITDA.

The results showed that higher reconciliation quality is negatively associated with instances where companies reported a positive EBITDA when IFRS earnings were negative. This potentially opportunistic use of poorly reconciled information provides support for the establishment of explicit disclosure requirements to enhance decision-useful disclosure. However, the association between reconciliation quality and the remaining two opportunistic factors, that is, when EBITDA is emphasised and when invalid adjustments are made in deriving EBITDA, was positive and indicates that management had disclosed decision-useful information through higher quality reconciliations when those two factors were present. In addition, the study found great diversity in how companies define EBITDA and also that the quality of EBITDA reconciliations in many SENS reports was lacking.

This study contributes to the limited body of research on non-GAAP disclosure by South African companies. It also contributes to the voluntary disclosure literature by focusing on a non-GAAP earnings measure that has been largely ignored by prior studies, namely EBITDA. The findings may be of interest to the JSE in maintaining high quality corporate disclosure and may also have policy implications for the IASB which is involved in a disclosure initiative to improve presentation and disclosure in financial reports.

OPSOMMING

Hierdie studie is onderneem om te bepaal of die Johannesburgse Effektebeurs ('JSE') en die *International Accounting Standards Board* ('IASB') eksplisiete openbaarmakingsvereistes rakende die formaat van rekonsiliasies tussen aangepaste Internasionale Finansiële Verslagdoeningstandaarde ('IFRS') verdienste, verwys na as nie-AARP verdienste, en IFRS verdienste moet spesifiseer. Die openbaarmaking van nie-AARP verdienste word gekoppel aan beide besluitnemingsnut en verdienstebestuur. As 'n vorm van verdienstebestuur kan maatskappybestuur nie-AARP verdienste op so 'n wyse openbaar wat gebruikers se siening van die prestasie van 'n maatskappy beïnvloed ten einde bestuur se eie opportunistiese doelwitte te verweselik. Indien rekonsiliasies tussen nie-AARP verdienste en IFRS verdienste van 'n hoë kwaliteit is, word die risiko van opportunistiese openbaarmaking beperk en besluitnemingsnuttigheid gefasiliteer. Deur die fokus te plaas op verdienste voor rente, belasting, waardevermindering en amortisasie ('EBITDA') is die volgende navorsingsvraag aangespreek: Is dit minder waarskynlik dat maatskappye hoër kwaliteit rekonsiliasies tussen EBITDA en IFRS verdienste verskaf, indien faktore wat gekoppel is aan opportunistiese openbaarmaking teenwoordig is?

Die kwaliteit van rekonsiliasies tussen EBITDA en IFRS verdienste, soos ingesluit in die SENS-verslae van JSE-genoteerde maatskappye vir die finansiële jare 2014 tot 2016, is bepaal. Die 'ordinary least squares' beramingsmetode is gebruik om 'n regressie uit te voer tussen die EBITDA rekonsiliasietelling en drie faktore wat gekoppel is aan opportunistiese openbaarmaking, naamlik: of groter klem geplaas is op EBITDA as IFRS verdienste; of EBITDA positief was toe IFRS verdienste negatief was; en of ongeldige aanpassings gemaak is by die vasstelling van EBITDA.

Die resultate het getoon dat hoër rekonsiliasiekwaliteit 'n negatiewe verwantskap gehad het met gevalle waar maatskappye 'n positiewe EBITDA geopenbaar het terwyl IFRS verdienste negatief was. Hierdie potensiële opportunistiese gebruik van swak gerekonsilieerde inligting verskaf ondersteuning vir die daarstelling van eksplisiete openbaarmakingsvereistes ten einde besluitnemingsnuttige openbaarmaking te bevorder. In teenstelling daarmee, was die verwantskap tussen die rekonsiliasiekwaliteit en die oorblywende twee faktore, dit wil sê, of EBITDA beklemtoon is en of ongeldige aanpassings gemaak is om EBITDA te bereken, positief. Hierdie positiewe verwantskap dui daarop dat, toe daardie twee faktore aanwesig was, bestuur deur die gebruikmaking van hoër kwaliteit rekonsiliasies besluitnemingsnuttige inligting aangebied het. Verder het die studie ook bevind dat daar groot verskille is tussen hoe maatskappye EBITDA definieer en ook dat die kwaliteit van EBITDA rekonsiliasies in baie SENS-verslae tekortskiet.

Hierdie studie dra by tot die beperkte literatuur oor nie-AARP openbaarmaking by Suid-Afrikaanse maatskappye. Dit dra ook by tot die vrywillige openbaarmakingsliteratuur deur te fokus op 'n nie-AARP verdienstemaatstaf wat grotendeels deur vorige studies geïgnoreer is, naamlik EBITDA. Die bevindinge mag vir die JSE van belang wees om hoë kwaliteit korporatiewe verslagdoening te handhaaf en dit mag ook beleidsimplikasies hê vir die IASB wat besig is met 'n openbaarmakingsinisiatief ten einde aanbieding en openbaarmaking in finansiële verslae te verbeter.

ACKNOWLEDGEMENTS

I wish to express my sincerest gratitude to my supervisor, Dr C. Lamprecht for the guidance provided.

I would also like to thank my family for all their support and understanding.

Soli Deo gloria.

Table of contents

Table of contents	vii
List of tables	xi
List of figures	xii
List of acronyms and abbreviations	xiv
CHAPTER 1: INTRODUCTION	1
1.1 BACKGROUND	1
1.2 RESEARCH PROBLEM	2
1.3 RESEARCH AIM AND RESEARCH QUESTION	6
1.4 RESEARCH HYPOTHESIS	7
1.5 RESEARCH OBJECTIVES	8
1.6 CONTRIBUTION	9
1.7 LIMITATIONS AND DELINEATION	11
1.8 CHAPTER OVERVIEW	13
 CHAPTER 2: LITERATURE REVIEW	 16
2.1 INTRODUCTION	16
2.2 UNDERLYING THEORY	16
2.2.1 The purpose of financial reporting information	16
2.2.1.1 Efficient market hypothesis	17
2.2.1.2 The IASB's Conceptual Framework	18
2.2.1.3 Earnings management theory	19
2.2.2 Conclusion	20
2.3 DECISION-USEFULNESS VERSUS EARNINGS MANAGEMENT	22
2.3.1 Decision-usefulness of financial information	22
2.3.2 Decision-usefulness of non-GAAP earnings	24
2.3.3 Earnings management through the strategic disclosure of non-GAAP earnings	27
2.3.4 EBITDA as non-GAAP earnings measure	28
2.3.5 Conclusion	29
2.4 THE ROLE OF RECONCILIATIONS IN ACHIEVING A FAITHFUL REPRESENTATION IN ORDER TO PROVIDE DECISION-USEFUL INFORMATION	32
2.4.1 The use of reconciliations between non-GAAP earnings and GAAP earnings to influence investor perceptions and reduce mispricing	32
2.4.2 The views of investors and analysts on reconciliations between GAAP earnings and non-GAAP earnings	38

2.4.3	Conclusion	39
2.5	RECONCILIATIONS BETWEEN NON-GAAP EARNINGS AND GAAP EARNINGS: REGULATORY REQUIREMENTS	41
2.5.1	United States: The SEC and Regulation G	41
2.5.2	Europe: The European Securities and Market Authority	42
2.5.3	Australia: The Australian Securities and Investment Commission	43
2.5.4	South Africa: The JSE	44
2.5.5	Conclusion	47
2.6	DISCLOSURE REQUIREMENTS IN IFRS STANDARDS: EXISTING AND PROPOSED	48
2.6.1	Defining IFRS earnings	49
2.6.2	Existing IFRS disclosure requirements relating to non-GAAP earnings	51
2.6.3	Proposed IFRS disclosure requirements relating to non-GAAP earnings	53
2.6.4	Conclusion	55
2.7	FACTORS AFFECTING RECONCILIATION QUALITY	57
2.7.1	Factors associated with reconciliation quality	57
2.7.1.1	Proxies for value relevance	58
2.7.1.2	Proxies for managerial incentives	59
2.7.1.3	Proxies for investor sophistication	61
2.7.1.4	Characteristics of adjustments between non-GAAP earnings and GAAP earnings	62
2.7.1.5	Other factors	65
2.7.1.6	Conclusion	65
2.8	OVERALL CONCLUSION ON THE LITERATURE REVIEW	67
CHAPTER 3: RESEARCH FRAMEWORK, DESIGN AND METHODOLOGY		70
3.1	INTRODUCTION	70
3.2	RESEARCH FRAMEWORK	70
3.2.1	Scientific research and the accounting worldview	70
3.2.2	The research process	72
3.2.2.1	Identify the research problem	72
3.2.2.2	Identify the research paradigm	73
3.2.2.3	Formulate the theory underlying the research aim	74
3.2.2.4	Consider the applicable methodology	74
3.2.2.5	Address validity concerns	76
3.3	RESEARCH DESIGN	77
3.3.1	Research design to meet the first research objective	78

3.3.2	Research design to meet the second research objective	79
3.3.3	Research design to meet the third research objective	81
3.3.4	Research design to meet the fourth research objective	85
3.3.5	Validity concerns	88
3.4	DATA COLLECTION	91
3.4.1	Research objectives one and two	91
3.4.1.1	Population and data collection	92
3.4.1.2	Validity concerns around data capturing from SENS reports	104
3.4.2	Research objectives three and four	106
3.4.2.1	Data collection	106
3.4.2.2	Validity concerns around company data captured from IRESS	106
3.5	CONCLUSION	106
CHAPTER 4: RESEARCH FINDINGS		108
4.1	INTRODUCTION	108
4.2	RESEARCH OBJECTIVE ONE	108
4.2.1	Results of research objective one: Describing the nature of EBITDA reporting	108
4.2.2	Conclusion on research objective one: Describing the nature of EBITDA reporting	124
4.3	RESEARCH OBJECTIVE TWO	125
4.3.1	Results of research objective two: Assessing EBITDA reconciliation quality	126
4.3.2	Conclusion on research objective two: Assessing EBITDA reconciliation quality	132
4.4	RESEARCH OBJECTIVES THREE AND FOUR	133
4.4.1	Results of research objective three: Identifying factors linked to opportunistic disclosure	134
4.4.2	Results of research objective four: Determining whether EBITDA reconciliation quality is negatively associated with factors linked to opportunistic disclosure	140
4.4.3	Sensitivity tests and validity concerns	146
4.4.4	Conclusion on research objectives three and four	151
4.5	OVERALL SUMMARY OF CHAPTER	152
CHAPTER 5: CONCLUSION		153
5.1	INTRODUCTION	153
5.2	EMPIRICAL FINDINGS	155
5.2.1	Research objective one: Describing the nature of EBITDA reporting	156

5.2.2	Research objective two: Assessing EBITDA reconciliation quality	158
5.2.3	Research objective three: Identifying factors linked to opportunistic disclosure	160
5.2.4	Research objective four: Determining whether EBITDA reconciliation quality is negatively associated with factors linked to opportunistic disclosure	162
5.2.5	Conclusion on empirical findings	164
5.3	THEORETICAL IMPLICATIONS	165
5.4	SUMMARY OF CONTRIBUTIONS	165
5.5	LIMITATIONS AND AREAS FOR FUTURE RESEARCH	166
5.6	CONCLUSION	168
	References	169

List of tables

Table 1: Reconciliation score sheet used by Zhang and Zheng (2011)	35
Table 2: Reconciliation score sheet used by Aubert and Grudnitski (2014)	37
Table 3: Main categories of adjustments between GAAP earnings and non-GAAP earnings	63
Table 4: The relationship between the research objectives and research designs	78
Table 5: Score sheet used in this study to measure reconciliation quality	80
Table 6: Factors associated with opportunistic disclosure	82
Table 7: Other factors that may influence reconciliation quality	83
Table 8: Independent variables used in the main regression	86
Table 9: Composition of the population used in the study	93
Table 10: Main categories of adjustments from prior studies linked to the categories used in this study	101
Table 11: List of EBITDA references in SENS reports and the frequency of occurrences per year for the period 2014 to 2016 (N = 220)	110
Table 12: List of definitions of EBITDA contained in SENS reports for the period 2014 to 2016 (N = 220)	113
Table 13: Mean market capitalisation (Rm) of company-years per reconciliation score and per year (N = 220)	129
Table 14: Descriptive statistics of variables used in main regression (N = 220)	135
Table 15: OLS results of the main regression model	141
Table 16: Variance inflation factors of independent variables in the main regression	147
Table 17: OLS results of robust regression model and comparison with results from main regression model	149

List of figures

Figure 1: Relationship between the JSE and IASB disclosure requirements and the research problem	5
Figure 2: Relationship between the research problem, the research question and the value of the study	7
Figure 3: Link between the research aim, the research objectives and the findings	9
Figure 4: Relationship between accounting theory and the research question	21
Figure 5: Relationship between the purpose of financial reporting and non-GAAP earnings	31
Figure 6: Relationship between voluntary disclosure and reconciliation quality	40
Figure 7: Reconciliation disclosure requirements of major capital market regulators	48
Figure 8: Reconciliation disclosure requirements of the IASB and JSE linked to research problem	56
Figure 9: Factors associated with reconciliation quality and the link to the research question	66
Figure 10: Summary of literature review	69
Figure 11: Worldviews in accounting	71
Figure 12: Overview of reconciliation scores awarded and further breakdown of score four instances (N = 220)	99
Figure 13: Overview of findings: How SENS reports referred to EBITDA and the types of adjustments made for the period 2014 to 2016 (N = 220)	111
Figure 14: Overview of findings: How SENS reports referred to and defined EBITDA for the period 2014 to 2016 (N = 220)	115
Figure 15: Discrepancies between how SENS reports referred, defined and calculated EBITDA for the period 2014 to 2016 (N = 220)	117
Figure 16: Overview of findings: SENS reports that referred to the EBITDA acronym only without providing a definition	119
Figure 17: Relative frequency of EBITDA adjustments in SENS reports from 2014 to 2016 (N = 220)	121
Figure 18: Industry concentration of EBITDA reporters in SENS reports from 2014 to 2016 (N = 220)	123
Figure 19: Distribution of EBITDA reconciliation scores in SENS reports from 2014 to 2016 (N = 220)	126
Figure 20: Mean EBITDA reconciliation score per industry for the period 2014 to 2016 (N = 220)	130
Figure 21: Relative frequency of EBITDA reconciliation scores per industry for the period 2014 to 2016 (N = 220)	132
Figure 22: Histograms of <i>EMPHASIS</i> per disclosure score category and in total (N = 220)	136
Figure 23: Histograms of <i>AVOID_LOSS</i> per disclosure score category and in total (N = 220)	137

Figure 24: Histograms of <i>INVALID</i> per disclosure score category and in total (N = 220)	139
Figure 25: Link between research aim and summary of key findings	155

List of acronyms and abbreviations

APM	Alternative performance measure
ASIC	Australian Securities and Investment Commission
CF	Conceptual Framework for Financial Reporting
CFA	Chartered financial analyst
EBIT	Earnings before interest and tax
EBITDA	Earnings before interest, tax, depreciation and amortisation
ESMA	European Securities and Market Authority
EU	European Union
GAAP	Generally accepted accounting practice
IAS	International Accounting Standards
IASB	International Accounting Standards Board
ITDA	Interest, taxation, depreciation and amortisation
IFRS	International Financial Reporting Standards
JSE	Johannesburg Stock Exchange Limited
PDF	Portable document format
PWC	Pricewaterhousecoopers
SAICA	South African Institute of Chartered Accountants
SCI	Statement of comprehensive income
SEC	United States Securities and Exchange Commission
SENS	Stock Exchange News Service of the Johannesburg Stock Exchange Limited
US	United States of America
VIF	Variance inflation factor

CHAPTER 1: INTRODUCTION

1.1 BACKGROUND

In South Africa, and elsewhere in the world, companies are increasingly reporting earnings measures that are not defined in accounting standards such as the International Financial Reporting Standards (IFRS). These alternative measures, frequently referred to as non-GAAP earnings,¹ are adjusted from IFRS earnings by removing the effect of non-recurring or non-operational transactions. Company management² can use non-GAAP earnings to give investors the benefit of management's superior inside knowledge about the nature and impact of the economic events affecting the company. In turn, investors can more accurately price shares as they now use the superior information to make a more accurate expectation of the future performance of a company. However, owing to the conflicting incentives between management and investors, management may also disclose non-GAAP earnings in an attempt to manage the perceptions of investors and thereby attain their own strategic³ goals. This strategic disclosure is intended to mislead investors.

The disclosure of high quality reconciliations between non-GAAP earnings and GAAP earnings provides investors with a more faithful representation of non-GAAP earnings by

¹ This study uses the term 'non-GAAP earnings' to refer to any earnings measure not defined in any set of accounting standards. Therefore, when referring to 'non-IFRS earnings', the term 'non-GAAP earnings' is used throughout this study to enable easier comparison with existing literature.

² Throughout the study, the term 'management' or 'managers' refers to the executive directors and other executive management of a company.

³ In the voluntary disclosure literature, the terms 'strategic' and 'opportunistic' have been used interchangeably. This will also be done in this study.

explaining the adjustments that management makes in calculating non-GAAP earnings. Such a detailed reconciliation therefore enhances the credibility and decision-usefulness of non-GAAP earnings. The Johannesburg Stock Exchange Limited (JSE), as a capital market regulator, and the International Accounting Standards Board (IASB), as an accounting standard setter, play an important role in prescribing disclosure requirements that will provide decision-useful information to investors.

The existing disclosure requirements of the JSE and the IASB are not explicit about the manner in which companies should explain the difference between non-GAAP earnings and IFRS earnings. A lack of explicit disclosure requirements provides management with an opportunity to obscure their intent to mislead investors through opportunistic disclosure. This study focuses on one specific non-GAAP earnings measure, but one which is widely used in financial reporting, namely: earnings before interest, tax, depreciation and amortisation (EBITDA).

1.2 RESEARCH PROBLEM

Companies listed on the JSE are required to disclose their annual results via the JSE Stock Exchange News Service (SENS).⁴ In this study these reports are referred to as SENS reports. The JSE has no specific disclosure requirements pertaining to non-GAAP earnings and requires only the SENS reports in which companies report their annual results in order to meet the requirements of the IASB's Conceptual Framework for Financial Reporting

⁴ The Stock Exchange News Service (SENS) of the JSE acts as a communication platform for JSE listed companies that are required to make the requisite company specific announcements about issues such as mergers, capital issues and financial results (JSE, 2016).

(Conceptual Framework). One of the requirements of this framework is that financial information should be a faithful representation and, therefore, constitute a complete depiction of the underlying economic phenomena and be without management bias. To the extent that the management of JSE-listed companies are motivated to disclose non-GAAP earnings for strategic reasons, they may wish to keep hidden from investors such an intent through poor disclosure of the link between the non-GAAP and IFRS earnings.

As one type of non-GAAP earnings measure, EBITDA may be even more susceptible to misleading disclosure. Despite its seemingly standardised nature, EBITDA is regularly adjusted for items other than interest, tax, depreciation and amortisation (ITDA) (CFA Society United Kingdom, 2015: 10). The term 'EBITDA' implies a reconciliation to IFRS earnings but, as EBITDA is undefined, companies may make adjustments other than interest, tax, depreciation or amortisation. Moreover, it is not clear which are the items of expense and income that should be classified under interest, tax, depreciation or amortisation (International Accounting Standards Board (IASB), 2016: 8–11). The IASB proposes changing IFRS disclosure requirements to compel companies to provide a reconciliation between their non-GAAP earnings and IFRS earnings. However, the IASB has not proposed a specific format of the reconciliation. As a result, companies that disclose EBITDA for opportunistic reasons may be motivated not to provide a clear quantitative reconciliation to IFRS earnings, arguing that the term itself implies a reconciliation with IFRS earnings.

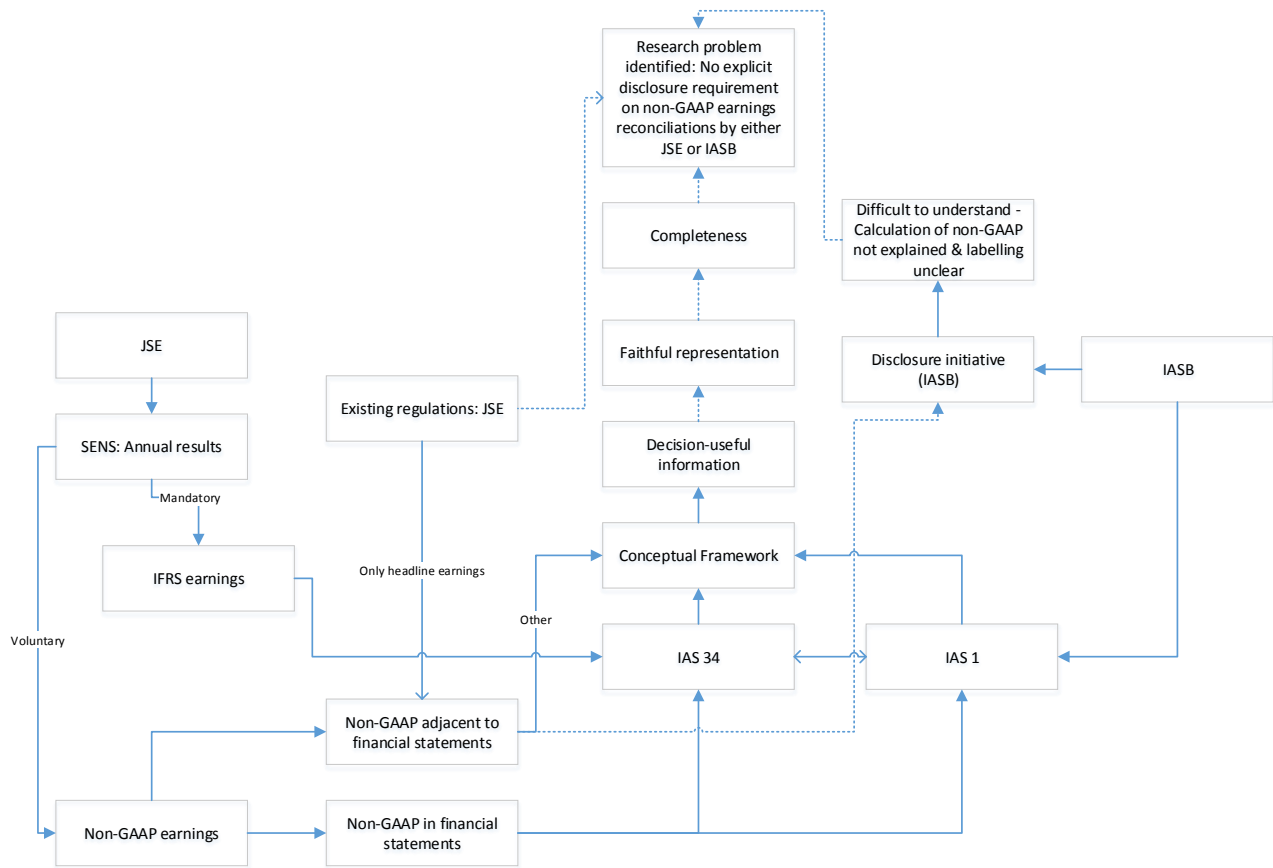
The problem identified above was supported by a preliminary inspection of a non-random sample of the SENS reports of ten JSE-listed companies. The ten SENS reports, all selected to include EBITDA, related to the companies' 2016 annual results. The results of the inspection revealed inconsistencies in the way in which the companies calculated and

disclosed EBITDA. It was found that some of the companies reconciled EBITDA to operating profit/loss while others reconciled it to net profit/loss for the year. In addition, when calculating EBITDA, some companies excluded expenses other than interest, tax, depreciation and amortisation, for example, gains/losses on foreign exchange transactions and gains/losses from black economic empowerment share transactions. One company provided no reconciliation to the statement of comprehensive income nor a calculation of how EBITDA had been calculated. Of the ten companies, only one disclosed a numerical reconciliation between EBITDA and IFRS earnings.

The initial indication was, therefore, that the quality of EBITDA reconciliations differs between JSE-listed companies. Furthermore, there are no explicit disclosure requirements in either IFRS standards or the JSE listing requirements to force companies to provide a complete reconciliation between IFRS earnings and EBITDA in their SENS reports. This lack of explicit requirements provides management with the opportunity to disclose EBITDA for opportunistic reasons and to obscure such intent through poor quality reconciling information. The problem this study attempts to address is whether the JSE and the IASB should provide explicit disclosure requirements with regard to the quality of the reconciliations between non-GAAP earnings and IFRS earnings.

Figure 1 below depicts the link between the existing disclosure requirements of the JSE and the IASB (both mandating decision-useful information), the shortcoming arising from not providing explicit disclosure requirements pertaining to non-GAAP reconciling information, and the research problem.

Figure 1: Relationship between the JSE and IASB disclosure requirements and the research problem



Source: Own observation

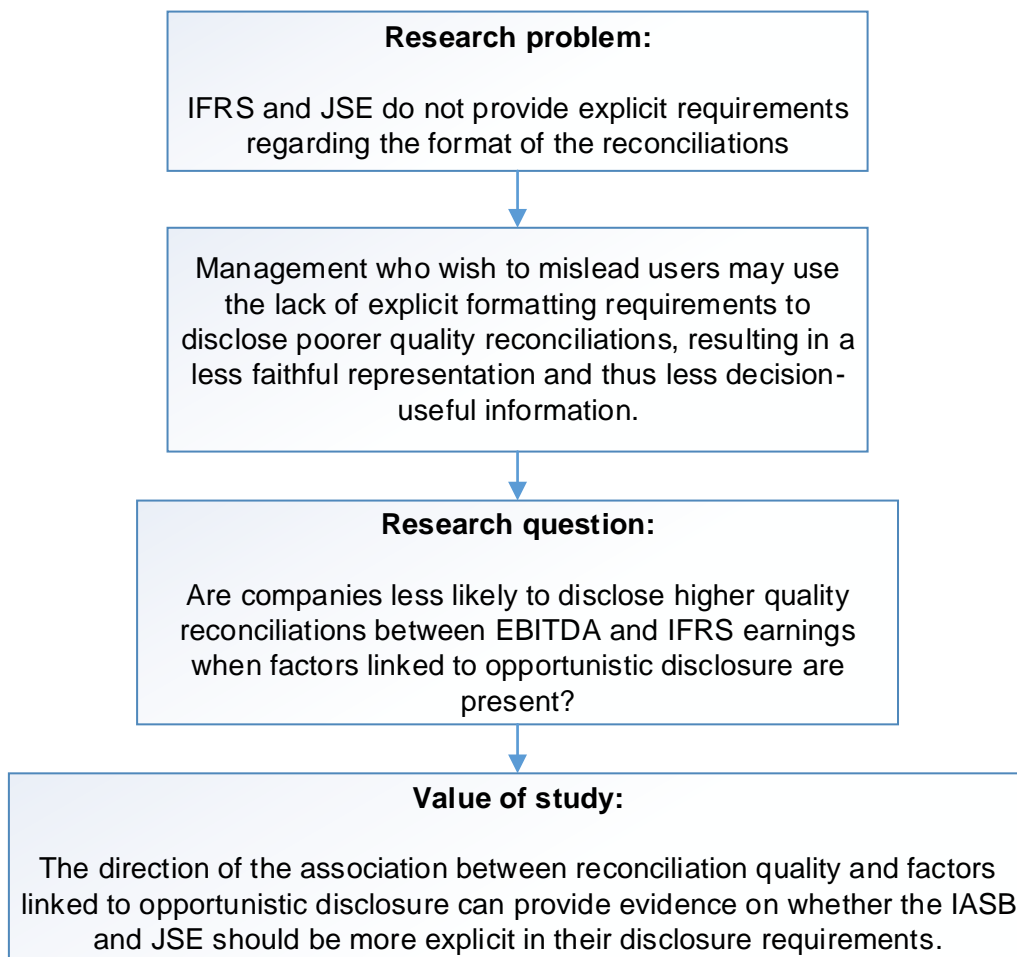
Figure 1 above illustrates the research problem. The literature review in Chapter 2 addresses the various elements depicting the research problem in Figure 1 in detail. The concluding section in Chapter 2, section 2.8, contains a diagram (Figure 10), which links the various elements depicted above. The next sections discuss the research aim of the study and the research question and state the research objectives. The research hypothesis is then stated.

1.3 RESEARCH AIM AND RESEARCH QUESTION

The research problem addressed in this study relates to determining whether the JSE and the IASB should provide explicit disclosure requirements with regard to the quality of reconciliations between non-GAAP earnings and IFRS earnings. In order to address the research problem, the aim of the study is to determine whether companies are more likely to disclose lower quality reconciling information between EBITDA and IFRS earnings when factors associated with opportunistic disclosure are present. In order to realise the research aim, this study attempts to answer the following research question: Are companies less likely to disclose higher quality reconciliations between EBITDA and IFRS earnings when factors linked to opportunistic disclosure are present?

The discovery of a negative association between the opportunistic factors and the reconciliation quality may suggest that management uses the lack of explicit disclosure requirements contained in the IFRS standards and the JSE listing requirements to obscure their opportunistic intent. Furthermore, such a finding could prompt both the JSE and IASB to formulate explicit disclosure requirements that will reduce the risk of opportunistic disclosure. Conversely, a positive correlation may provide evidence of the adequacy of the existing requirements. However, both a positive or negative association has policy implications as, at the time of the study, the IASB was in the process of revising its disclosure requirements. Figure 2 below summarises the link between the research problem, the research question and the value of the study. The value of the study is discussed in greater detail in section 1.6.

Figure 2: Relationship between the research problem, the research question and the value of the study



Source: Own observation

1.4 RESEARCH HYPOTHESIS

In the South African context, Howard (2016: 84–85) provides evidence suggesting that South African companies disclose non-GAAP earnings for opportunistic purposes. In such a case, it is hypothesised that companies would be less likely to disclose higher quality reconciliations when factors associated with opportunistic disclosure are present. The research hypothesis in alternative form is stated as follows:

H_A: EBITDA reconciliation quality is negatively associated with factors that are associated with opportunistic disclosure.

If the hypothesis stated above is supported, it will provide support for the JSE or the IASB to explicitly require detailed reconciling information that limits the risk of opportunistic disclosure by management. The reason for this is that it is not possible to obtain a faithful representation and, ultimately, decision-useful information if there is management bias in the information presented.

1.5 RESEARCH OBJECTIVES

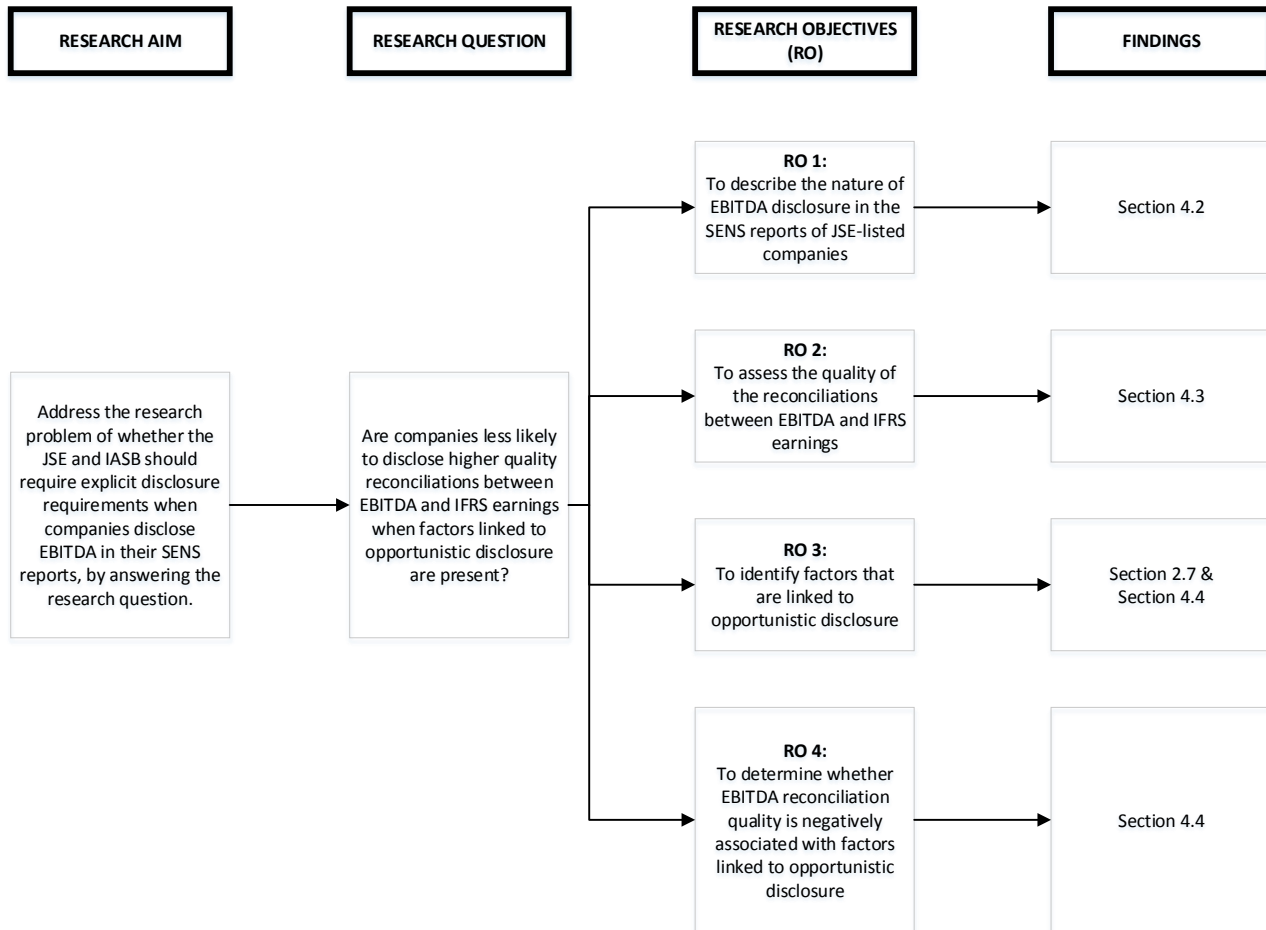
In order to realise the research aim by answering the research question stated in section 1.3 above, the following four research objectives, which are discussed in more detail in Chapter 3, were formulated:

- i) To describe the nature of EBITDA disclosure in the SENS reports of JSE-listed companies.
- ii) To assess the quality of the reconciliations between EBITDA and IFRS earnings.
- iii) To identify factors that are linked to opportunistic disclosure.
- iv) To determine whether the EBITDA reconciliation quality is negatively associated with factors linked to opportunistic disclosure.

The purpose of research objective one is to determine whether South African JSE-listed companies view EBITDA as a standardised measure and, if not, to identify the types of adjustments made to arrive at EBITDA and to determine whether such adjustments are explained. The extent to which EBITDA is inconsistently calculated provides support for requiring management to explain the calculation. Measuring the quality of this explanation

(or reconciliation) is the purpose of objective two. The findings from objectives two and three may then be used to realise objective four. Figure 3 below illustrates the link between the research aim discussed in the previous section and the research objectives, and also shows the point at which the research objectives are met.

Figure 3: Link between the research aim, the research objectives and the findings



Source: Own observation

1.6 CONTRIBUTION

Although there has been a steady increase in research into the voluntary disclosure of non-GAAP earnings measures by companies over the past years, many questions remain unanswered (Marques, 2017: 331). This study contributes to the existing body of knowledge

on voluntary disclosure by investigating whether the disclosure quality of the reconciliations between EBITDA and IFRS earnings are related to factors linked to management's opportunistic use of voluntary disclosure in order to influence investors.

The study may be said to respond to calls made in previous literature to extend relevant research to countries outside of the United States so as to provide more evidence on the use of reconciliations and also to focus on non-GAAP measures other than bottom-line earnings. For example, Allee, Bhattacharya, Black and Christensen (2007: 220) called for more research on the use of reconciliations as a disclosure tool that provides decision-useful information while Black, Christensen, Ciesielski and Whipple (2017: 35–38) have called for more research outside of the US and a greater focus on non-GAAP earnings other than bottom-line earnings.

The problem of determining whether management provides voluntary disclosure of non-GAAP earnings for their own strategic goals or to inform investors will, in all likelihood, never be resolved. Therefore, according to Young (2014: 447), “[t]he dilemma for investors and regulators is how to give management freedom to use non-GAAP earnings to communicate their private information regarding key earnings components while simultaneously limiting management's ability to employ such disclosures opportunistically”. The IASB recognises this dilemma and is in the process of implementing an initiative aimed at improving the disclosure requirements relating to non-GAAP earnings. One of the proposed improvements contained in the disclosure initiative is to require companies to reconcile non-GAAP earnings and IFRS earnings when disclosing non-GAAP earnings in financial reports (IASB, 2017a,

para. 5.34b)⁵. The proposed improvement is, however, silent on the format of the reconciliation. It is anticipated that the findings from this study will indicate whether lower quality reconciliations are associated with factors linked to opportunistic disclosure. This may provide a timely prompt to the IASB to be explicit in respect of the required level of detail and the format of the reconciliations between non-GAAP earnings and IFRS earnings. This may also limit management's use of opportunistic disclosure and enhance the transparency of financial reports.

If the evidence reveals a positive association consistent with management providing the user with decision-useful information despite the existence of factors associated with opportunistic disclosure, this will provide support for concluding that the existing disclosure requirements of the JSE and the IASB are sufficient. This is an important consideration in view of the fact that it is the intention of the IASB to set principle-based disclosure requirements rather than prescriptive disclosure requirements (IASB, 2017b, para. 11). However, either finding has policy implications. The next section discusses the limitations of the study.

1.7 LIMITATIONS AND DELINEATION

The focus of this study is to investigate whether South African JSE-listed companies are more likely to disclose poorer quality reconciling information pertaining to EBITDA and IFRS

⁵ Following the completion of this study, the IASB moved the topic, that is, the use of performance measures and proposed improved disclosure thereof, from its Disclosure Initiative Project to a related project, the Primary Financial Statements Project (IASB, 2018b, para. 41). At the time of writing this thesis, the Primary Financial Statements Project was still ongoing (IASB, 2018c: 5).

earnings when factors associated with opportunistic disclosure are present. Although the evidence may suggest that management uses EBITDA reconciliation-disclosure opportunistically, the study does not and is not able to provide evidence on management's actual intent as the latter is unobservable. Furthermore, the study does not investigate how the users of financial information react to the information; i.e. whether users find the reconciling information either useful or misleading.

The units of observation in the study are the SENS reports of JSE-listed companies. In contrast to annual financial statements, which are required to be audited in full, SENS reports are subject to auditor review only. As a result of the extensive auditor scrutiny, companies may be less inclined to report non-GAAP earnings in their annual financial statements than in their SENS reports. The extrapolation of the findings of this study to audited financial reports should take this into account.

Prior studies have examined adjusted GAAP earnings from the perspective of different accounting standards and commonly refer to these as non-GAAP earnings. In order to facilitate easier reference to existing literature, this study uses the term non-GAAP earnings throughout despite the fact that the accounting standards that form the focus of the study are the IFRS standards.

Since this study focuses only on EBITDA as a non-GAAP performance measure, the study's findings may not necessarily apply to the way in which management discloses other non-GAAP earnings measures. In addition, companies also report other measures of performance that are defined in IFRS standards. For example revenue, which is defined in IFRS standards, can also be seen as a performance measure (IASB, 2017c). However, the

focus of this study is on earnings as a summary measure of performance rather than on line items which present a specific performance indicator. Revenue is, therefore, excluded from the study.

Lastly, due to country specific factors and the listing status of the companies making up the population, caution should be exercised when inferences are made to unlisted companies and to companies outside of South Africa. The next section provides an overview of the chapters comprising the study.

1.8 CHAPTER OVERVIEW

The previous sections discussed the research problem. This section will show the structure of the thesis. This study consists of five chapters. A brief outline of each chapter is provided below.

Chapter 1 – Introduction

The first chapter introduces the research topic by providing the background to the study. The chapter then identifies the research problem and relates it to the aim of the study. Based on the aim of the study, the related research question together with the research hypothesis are stated. This is followed by the formulation of the research objectives deemed necessary to answer the research question. Finally, the limitations of the study are discussed and a delineation of the study provided.

Chapter 2 – Literature review

The second chapter commences by presenting the theoretical base underlying the research topic in order to position the study in existing literature. The chapter outlines the role that non-GAAP earnings measures play in conveying decision-useful information, but also show that non-GAAP earnings can be used opportunistically. The chapter then investigates both how reconciliations may be used to enhance the decision-usefulness of non-GAAP earnings and also the existing regulations pertaining to non-GAAP disclosure, both internationally and in South Africa. The chapter then discusses the existing non-GAAP earnings disclosure requirements in IFRS standards as well as proposed improvements under consideration by the IASB. Finally, the chapter concludes with a review of existing literature on factors that may potentially affect the reconciliation quality, with a specific focus on factors associated with opportunistic disclosure.

Chapter 3 – Research framework, design and methodology

The third chapter positions the study within a particular philosophical worldview of accounting. The research process employed in the study is discussed as are the various research designs used to realise the research objectives. Thereafter, the data collection process pertaining to each research objective is discussed. Validity concerns are addressed throughout the chapter.

Chapter 4 – Research findings

This chapter presents the results obtained from the research designs discussed in Chapter 3. Descriptive evidence on the nature of EBITDA adjustments, the quality of EBITDA reconciliations, and the variables used in the main regression is provided. The chapter ends with the regression results required to realise the fourth research objective.

Chapter 5 – Conclusion

The fifth and final chapter presents a conclusion on the results obtained in Chapter 4. In addition, it also summarises the research process which was undertaken to achieve the aim of the study.

Chapter 1 provided the introduction to this study while the next chapter investigates existing literature relevant to the study.

CHAPTER 2: LITERATURE REVIEW

2.1 INTRODUCTION

This chapter presents a review of existing literature that is relevant to this study. Section 2.2 discusses the applicable theoretical bases underlying voluntary disclosure literature and then establishes the relationship between the theoretical bases and the research question. Section 2.3 identifies the purpose of financial reports and links it to non-GAAP earnings disclosure while section 2.4 discusses the role of reconciliations in providing decision-useful information. Sections 2.5 and 2.6 continue with the discussion of the role of reconciliations by presenting the views of major capital market regulators and the IASB respectively. In addition, section 2.6 also defines IFRS earnings and discusses proposed new IFRS disclosure requirements intended to improve non-GAAP earnings disclosure. Section 2.7 investigates factors that existing literature have linked to management disclosure strategies, with specific focus on the opportunistic use of non-GAAP earnings disclosure. Section 2.8 concludes the literature review.

2.2 UNDERLYING THEORY

This section discusses the accounting theories which were deemed relevant to this study. It also explains why the earnings management theory and the decision-usefulness theory are the two theories underlying this study.

2.2.1 The purpose of financial reporting information

According to Riahi-Belkaoui (2012: 331), accounting may be perceived as a multiple-paradigm science in which various theoretical approaches are used. Lamprecht (2016: 65) observes that accounting theories may be grouped into the following three main groups:

- decision-useful predictive theories
- decision-useful prescriptive theories, and
- classical descriptive theories.

Within the main groups above, the following three sub-categories of theories that pertain to the voluntary disclosure of accounting information are assessed in this chapter:

- The efficient market hypothesis (section 2.2.1.1);
- The IASB's *Conceptual Framework for Financial Reporting* (Conceptual Framework) (section 2.2.1.2); and
- Earnings management theory (section 2.2.1.3).

The efficient market hypothesis forms part of the decision-useful predictive theories, the Conceptual Framework underlies decision-useful prescriptive theories, whereas earnings management theory forms part of classical descriptive theories (Lamprecht, 2016: 65). The three theories, and how they relate to this study, are explained in more detail in the following sections. At the end of section 2.2.1 an overview of the theories is provided in Figure 4.

2.2.1.1 Efficient market hypothesis

One of the most important purposes of accounting information is to provide the users of financial reports with information that is useful when they make economic decisions (Riahi-Belkaoui, 2012: 330). If capital markets are fully efficient, it may be argued that accounting information has no function as the markets will be able to impound in share prices all information, be it public or private. However, existing literature shows that capital markets are not fully efficient with Healy and Palepu (2001: 420) stating that “even in an efficient capital market, managers have superior information to outside investors on their firms’

expected future performance”. This is especially relevant in the South African context as evidence suggest that the South African market is only weakly efficient (Jefferis & Smith, 2005: 54; Watson & Rossouw, 2012: 431), thus implying that only information in the public domain, and not management’s private information, is impounded in a company’s share price.

It is, therefore, clear the above information asymmetry between management and investors needs to be addressed through proper corporate disclosure to enable capital markets to function efficiently (Healy & Palepu, 2001: 406). The next section discusses the way in which the IASB’s Conceptual Framework may address such information asymmetry.

2.2.1.2 The IASB’s Conceptual Framework

One way of addressing the abovementioned problem of information asymmetry between management and investors is for standard setters, such as the IASB, to develop accounting standards for use in the capital markets. Forming the basis of its accounting standards, the IASB’s Conceptual Framework prescribes that accounting standards should provide decision-useful information to investors (IASB, 2018a, chap. 1.2). However, a problem with IFRS standards lies in the strengths of these standards; that is, their prescriptive base provides for consistency and reliability in financial reporting between companies and over time but, at the same time, may fail to incorporate company-specific information in earnings (Young, 2014: 444). On their own, IFRS standards may actually widen the information asymmetry.

As a remedy, in order to convey its company-specific insider knowledge to investors, management may voluntarily disclose non-GAAP earnings in order to improve the portrayal

of company performance. However, voluntary disclosure may be misused in the interests of management's own goals. The next section on earnings management theory discusses such potential misuse in more detail.

2.2.1.3 Earnings management theory

As stated above, voluntary disclosure may provide decision-useful information. However, conflicting incentives between management and investors may lead to management using voluntary disclosures, not in order to provide investors with more information but, instead, to mislead them for strategic reasons (Young, 2014: 450). In this sense, therefore, management uses disclosure (rather than managing earnings through accounting entries) as a tool to manage the investors' earnings perception in order to meet their own strategic goals (Black, Christensen, Joo & Schmardebeck, 2014: 1). Watts and Zimmerman (1990: 135) broadly define earnings management as management having discretion over accounting numbers, either with or without restrictions. Strategic disclosure is related to earnings management. Schrand and Walther (2000: 152) define 'strategic disclosure' as follows: "Strategic disclosure in earnings announcements is related to earnings management, but the manager is managing the perception of earnings rather than managing actual earnings." The above definition of strategic disclosure as a form of earnings management, by Schrand and Walther (2000: 152), is also used in this study.

In order for management to be successful in managing earnings, management must believe that the market is not perfectly efficient and that investors would not be able to unravel their self-serving intent (Fields, Lys & Vincent, 2001: 260). Consequently, in terms of earnings management theory, management will attempt to obscure their intent to mislead investors by providing investors with as little information as possible to ensure they do not unravel

management's intent. However, this theory will not hold if one assumes that capital markets are perfectly efficient in processing all available information. As stated by Young (2014: 452), "[i]f markets are efficient, then prices reflect all available information and investors are not systematically fooled by the form in which information is packaged and presented". If investors are not able to unravel management's strategic intent, then voluntary disclosure falls short of providing investors with complete and credible information and, thus, decision-useful information. This, then, leaves room for standard setters and regulators to prescribe, or mandate, disclosure requirements that facilitate decision-useful information (Beyer, Cohen, Lys & Walther, 2010: 297). For example, by applying its Conceptual Framework, the IASB may change the disclosure requirements in the IFRS standards to force management to disclose more complete and, therefore, decision-useful information.

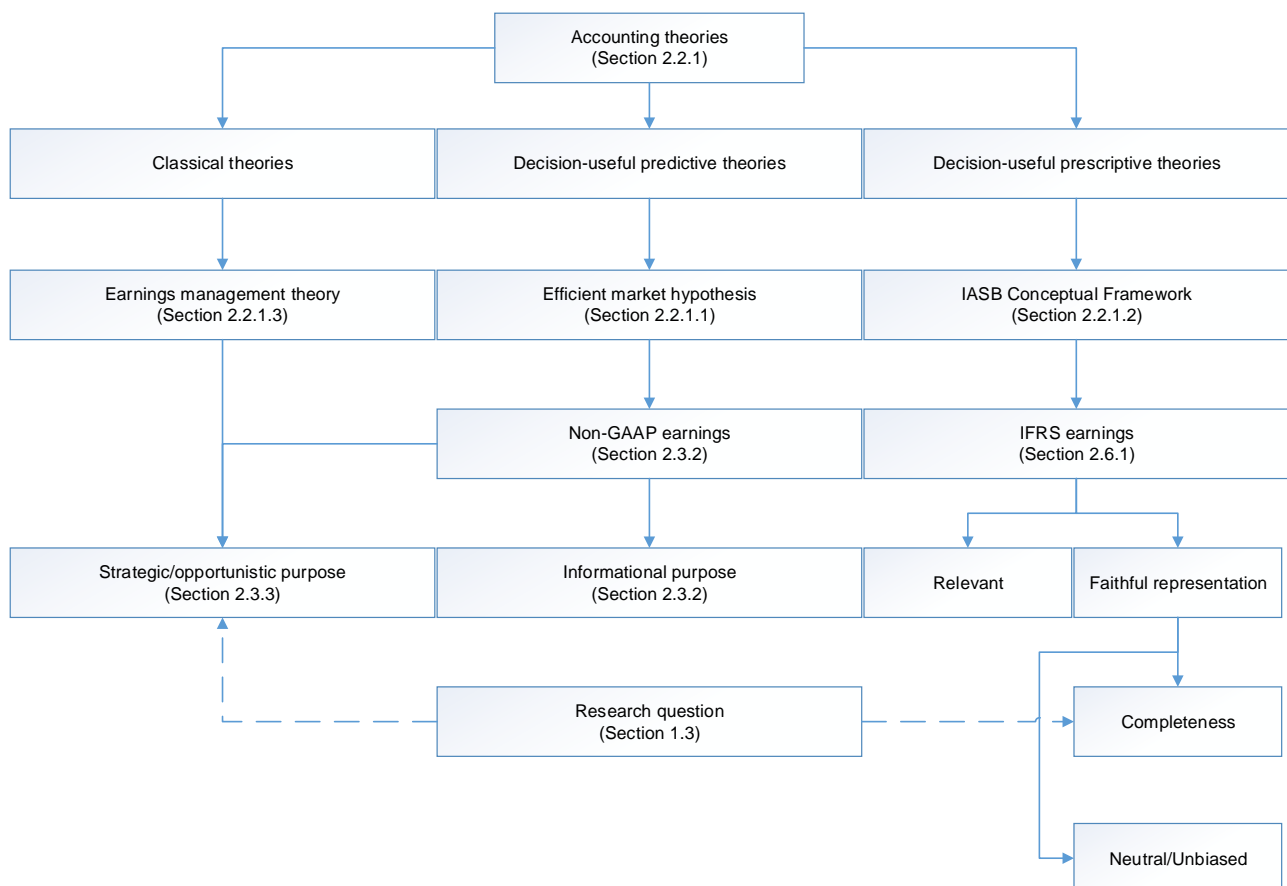
2.2.2 Conclusion

This section established the theories underpinning this study. It then discussed the three applicable theories, namely, the efficient market hypothesis, the IASB's Conceptual Framework and earnings management theory. The section showed that, in view of evidence suggesting that the South African market is only weakly efficient, the efficient market hypothesis provides support for the appropriateness of applying the earnings management theory in the study. Thus, the two applicable theories used in this study are the earnings management theory and the IASB's Conceptual Framework. In terms of earnings management theory management may be expected to manage the earnings perceptions of the users through incomplete disclosure. Where management has incentives to disclose non-GAAP earnings for opportunistic reasons, they will attempt to obscure their intent by disclosing less complete information; that is, management will manage the users' perceptions (and thus earnings) by providing disclosure that does not enable the users to reconcile the non-GAAP earnings with the GAAP earnings.

However, if management wishes to disclose non-GAAP earnings that provide decision-useful information, it is expected that a complete depiction of the link between non-GAAP and GAAP earnings will be disclosed. Such complete disclosure is expected even when incentives exist for management to manage the users' earnings perception.

Figure 4 below summarises the discussion provided in this section. It establishes the link between the theoretical bases underlying this study and the research question, namely: are companies less likely to disclose higher quality reconciliations between EBITDA and IFRS earnings when factors linked to opportunistic disclosure are present?

Figure 4: Relationship between accounting theory and the research question



Source: Own observation as adapted from Lamprecht (2016: 65)

This section discussed the theories applicable to this study. The following sections discuss the two main theories, decision-usefulness theory and earnings management theory, in more detail.

2.3 DECISION-USEFULNESS VERSUS EARNINGS MANAGEMENT

This section starts with a brief overview of the decision-usefulness of financial information. It then discusses the usefulness of non-GAAP earnings to provide additional information but also highlights the risk of misuse of non-GAAP earnings as an earnings management tool by way of strategic disclosure. The focus is then narrowed to EBITDA, a well-known and widely used non-GAAP earnings measure.

2.3.1 Decision-usefulness of financial information

As discussed in section 2.2, a major role of financial reporting is to provide decision-useful information to the users of financial statements. From a capital market's perspective this role becomes important to investors⁶ from both an ex ante and an ex post perspective (Beyer *et al.*, 2010: 296). Ex ante, investors seek accounting information to enable them to value a company before investing their resources (a valuation perspective) while ex post, investors seek to monitor the stewardship of the management in relation to the investment made in a company (a stewardship perspective).

In the process of providing investors with financial information to enable valuation decisions, a risk of information asymmetry between the investor and management arises. This

⁶ The term, 'investors', includes equity investors and debt providers.

information problem is partly due to the proprietary information of a company to which investors are not privy, and partly due to conflicting incentives on the part of investors and management (Healy & Palepu, 2001: 407–408). Management will, typically, be in possession of ‘inside’ information on the expected future returns of a company, information that is not readily available to investors, thereby creating an information gap. If the information gap is not resolved, this may lead to investors either under- or overvaluing a company (Healy & Palepu, 2001: 408).

From a stewardship perspective, an agency problem arises once investors have invested in a company. The agency problem exists as management may have incentives to act in a manner that is in their own best interest and not necessarily in the best interest of the investor, thereby leading to an expropriation of invested resources (Healy & Palepu, 2001: 407).

Various solutions exist to solve the information and agency problems and, thereby, bridge the information gap to ensure investors receive useful financial information. According to Healy and Palepu (2001: 408–410), potential solutions to solve the information and agency problems include

- optimal contracts between investors and management that align to both their interests
- regulation that requires management to disclose information
- intermediaries such as analysts who provide additional information, and
- intermediaries such as auditors who monitor the disclosure of financial information.

In view of the fact that the research problem in this study pertains to the potential lack of explicit disclosure requirements by the JSE and IASB with regard to non-GAAP earnings,

this study focuses only on the role of regulations and not on the role of optimal contracts and intermediaries in solving the information and agency problems. In an attempt to address the information gap between management and investors, bodies that set accounting standards, such as the IASB, prescribe the accounting standards that they expect will provide decision-useful information. In terms of the Conceptual Framework issued by the IASB, the objective of general purpose financial reports is to provide decision-useful information to investors, lenders and creditors (IASB, 2018a, chap. 1.2). In terms of the Conceptual Framework, existing, or potential, investors, lenders and creditors are seen as the primary users of financial reports (hereafter the study only refers to ‘users’ but implies primary users). Decision-useful information should enable users to estimate the future cash flows of a company and, in turn, to decide whether to provide resources to the company in question. In order to be considered decision-useful, financial information must be a faithful representation of the economic event it portrays and it must be relevant (IASB, 2018a, chap. 2.4).

2.3.2 Decision-usefulness of non-GAAP earnings

Whether accounting standard setters have succeeded in developing accounting standards that provide users with decision-useful information, remains an open question. Evidence suggest that the value relevance⁷ of earnings measures, as defined in the accounting standards issued by the Financial Accounting Standards Board of the US, commonly referred to as US Generally Accepted Accounting Practice (US GAAP), have declined (Lev

⁷ Value relevance measures whether a statistically significant association exists between accounting amounts of companies and the market values of shares or returns of companies. Amounts deemed value relevant should, at least, be relevant and faithfully represented (Barth, Beaver & Landsman, 2001: 81).

& Zarowin, 1999: 353)⁸. On the other hand, evidence from the US, Canada, Europe and New Zealand shows that there is a global trend in terms of which companies are increasingly reporting non-GAAP earnings in their communications with stakeholders (Bradshaw & Sloan, 2002; Bhattacharya, Black, Christensen & Mergenthaler, 2004; Entwistle, Feltham & Mbagwu, 2005; Aubert & Grudnitski, 2014; Rainsbury, Hart & Buranavityawut, 2015). Howard (2016: 59) provides evidence that South African companies are also increasingly reporting non-GAAP earnings. Furthermore, evidence show that both investors and analysts prefer non-GAAP earnings measures as a better performance measure as compared to GAAP earnings (Papa, Peters & Schacht, 2016: 16). Non-GAAP earnings may be defined as any financial performance measure derived by adjusting GAAP earnings (Papa *et al.*, 2016: 1). Accordingly, 'GAAP' includes US GAAP and IFRS standards. Non-GAAP earnings are referred to by various terms, including:

- Adjusted net income (Papa *et al.*, 2016: 11);
- Alternative performance measure (CFA Society United Kingdom, 2015: 2);
- Earnings before interest and tax (EBIT) (Papa *et al.*, 2016: 11);
- Earnings before interest, tax, depreciation and amortisation (EBITDA) (Papa *et al.*, 2016: 11);
- Pro-forma earnings (Young, 2014: 445); and
- Street earnings (Young, 2014: 445).

⁸ It should be noted that existing literature refers widely to 'generally accepted accounting practice' or GAAP when referring collectively to any set of accounting standards accepted by capital markets worldwide. The term does not necessarily refer to US GAAP. As elsewhere in existing literature, this study also uses the term GAAP to refer to any set of accounting standards.

As stated earlier, this study refers collectively to any earnings measure adjusted from GAAP earnings, including earnings adjusted from IFRS earnings, as non-GAAP earnings. A potential reason for the popularity of non-GAAP earnings is that GAAP earnings is a one-size-fits-all measure that attempts to provide a uniform basis for measuring earnings (Young, 2014: 444). Arguably, the use of GAAP earnings increases comparability between companies and across years despite the fact that GAAP earnings disregard the heterogeneous nature of companies and do not take into account company-specific aspects.

In view of the existence of proprietary information about company-specific aspects alluded to above, management has inside knowledge that may not be readily available to external users. This creates an information gap between management and users which can, however, be overcome if management voluntarily provides information to bridge the information gap (Healy & Palepu, 2001). Furthermore, if investors perceive GAAP earnings to be of low quality or low credibility, this may result in the mispricing of company shares. Management, therefore, has an incentive to provide users with non-GAAP earnings when GAAP earnings lack decision-usefulness (Entwistle, Feltham & Mbagwu, 2010: 263).

By voluntarily reporting adjusted GAAP earnings that address company-specific aspects, management may provide users with a better reflection of a company's continuing earnings potential. As such, management then reports GAAP earnings that they adjust for non-recurring items or for income and expenses outside of the company's core operations in order to provide users with better information to use when estimating recurring future cash flows. In doing so, management bridges the information gap that exists between management and users by providing users with more decision-useful information. According to Young (2014: 450), a large body of evidence supports the informational use of non-GAAP earnings. Drawing from existing literature, Young (2014: 450) concludes that evidence

supports non-GAAP earnings as being more persistent, more value relevant and better able to predict future performance than GAAP earnings.

2.3.3 Earnings management through the strategic disclosure of non-GAAP earnings

Opposing the view that non-GAAP earnings is used for informational purposes, existing literature argues that management may be tempted to mislead users through non-GAAP earnings disclosure. Although it is not possible to determine management's intent directly, evidence suggests that management discloses non-GAAP earnings that portrays a more favourable view of company performance, than the view conveyed by GAAP earnings (Young, 2014: 450). For example, management may attempt to mislead users by reporting a non-GAAP earnings figure that exceeds GAAP earnings in order to portray an improved measure of performance (Bhattacharya, Black, Christensen & Larson, 2003; Doyle, Jennings & Soliman, 2013; Howard, 2016). In addition, management is also more likely to report a non-GAAP profit if GAAP earnings amounted to a loss, or to report positive non-GAAP earnings growth if the GAAP earnings growth is negative, or to report non-GAAP earnings that meet or beat analyst forecasts if the GAAP earnings do not (Walker & Louvari, 2003; Lougee & Marquardt, 2004; Black & Christensen, 2009; Barth, Gow & Taylor, 2012; Isidro & Marques, 2013).

The United States Securities and Exchange Commission (SEC) has voiced its concern that users may be misled by non-GAAP earnings (Securities and Exchange Commission (SEC), 2003). Such concern has led researchers to question whether or not investors are, indeed, misled by opportunistic disclosure. Collectively, studies show that some investors, at least, are misled by non-GAAP earnings (Bhattacharya *et al.*, 2003; Marques, 2006; Black *et al.*, 2014).

2.3.4 EBITDA as non-GAAP earnings measure

As shown above, non-GAAP earnings encompass various performance measures, including EBITDA. However, when investigating non-GAAP earnings, EBITDA has been regularly excluded from the focus of existing studies. Based on their synopsis of existing literature on voluntary disclosure, Black *et al.* (2017: 35) found that prior research had focused primarily on bottom-line non-GAAP earnings. Research on other non-GAAP earnings measures is limited and, as a result Black *et al.* (2017: 35), called for research that includes non-GAAP performance measures other than bottom line non-GAAP earnings. A reason for the exclusion of EBITDA from prior studies is that EBITDA is widely accepted as accounting earnings before interest, tax, depreciation and amortisation (IASB, 2017a: 8), despite evidence showing that inconsistencies exist in the way in which companies calculate EBITDA (Hitz, 2010: 67; IASB, 2016: 11). These inconsistencies exist because EBITDA is not comprehensively defined by accounting standards and also because management is not restricted by the types of adjustments they make in order to derive EBITDA. By focusing on EBITDA this study answers the abovementioned call for research to include other non-GAAP earnings measures.

As a result of the inconsistencies mentioned above, standard setters and analysts have raised their concerns that reported EBITDA may be misleading because the adjustments which companies make to derive at EBITDA are inconsistent across companies (Papa *et al.*, 2016: 22; IASB, 2017a, sec. 5.11). Accordingly, there is a risk that mispricing may occur in instances where investors use EBITDA when valuing a company. This is of particular importance in view of the fact that the perceived importance of EBITDA vis-à-vis GAAP earnings is on the increase. Recent evidence from European institutional investors shows that professional investors perceive EBITDA as being more relevant and a more faithful representation than bottom-line GAAP earnings in predicting the future cash flows of a

company (Cascino, Clatworthy, Osma, Gassen, Imam & Jeanjean, 2016). The importance of EBITDA in measuring company performance has also been highlighted in a recent member survey conducted by the CFA Institute (Papa *et al.*, 2016: 20), which shows that EBITDA is one of the most commonly used non-GAAP measures.

In view of the importance attached to EBITDA and its potential to be used for strategic disclosure purposes the question as to whether EBITDA is indeed used for strategic disclosure purposes remains open. In this regard, existing literature is largely silent. However, this study aims to contribute to the existing body of knowledge by investigating the link between factors associated with strategic disclosure and EBITDA disclosure quality.

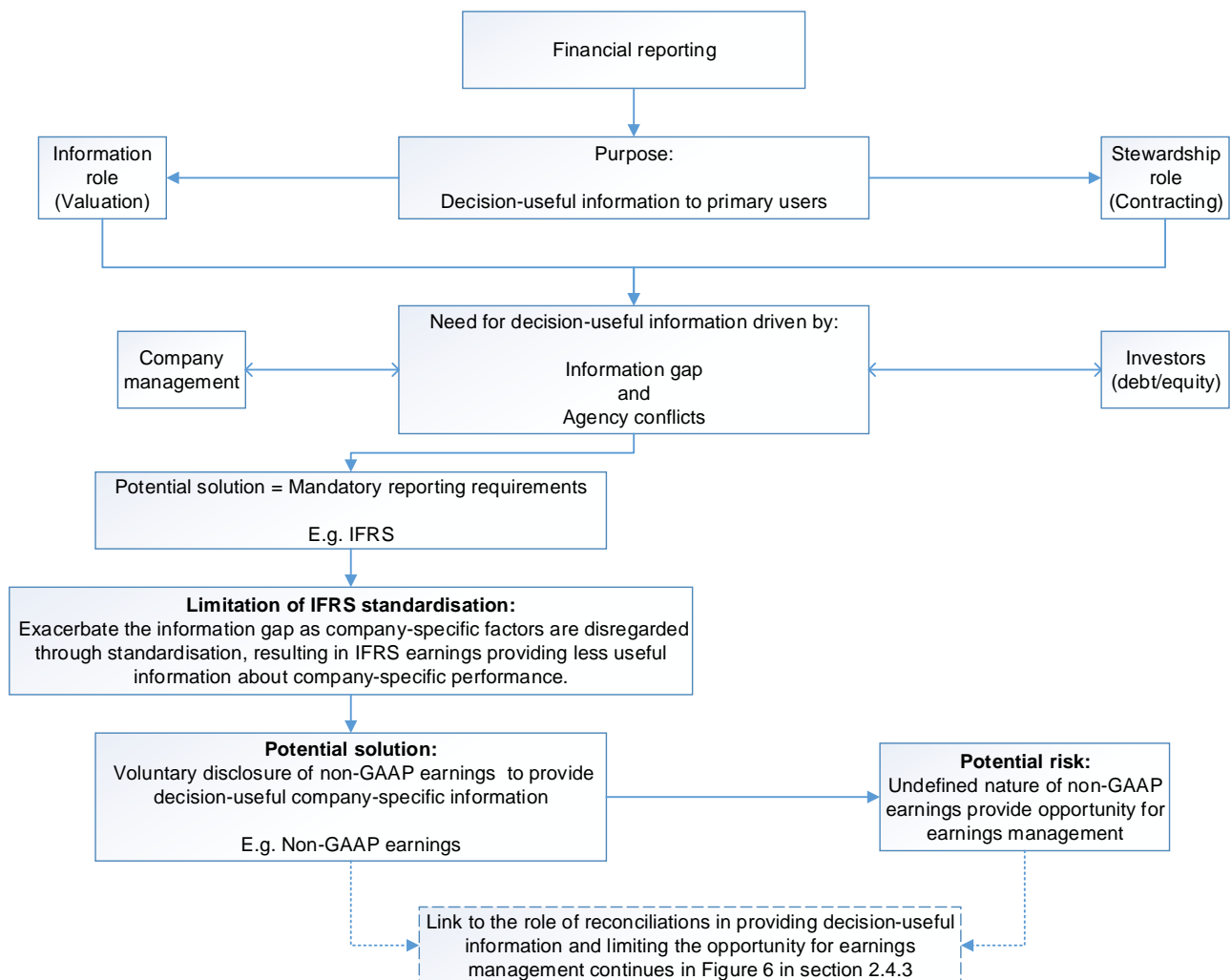
2.3.5 Conclusion

The main purpose of accounting standards is to provide information that is decision-useful to users in assessing both the value of a company as well as the extent to which management has performed its stewardship role over the resources under its control. Owing to the strict definition of earnings, as defined by accounting standards, management may sometimes be constricted in conveying decision-useful information. Management may then use non-GAAP earnings to overcome the shortcomings in earnings as defined by accounting standards by disclosing an adjusted earnings amount that conveys better information about a company's future earnings potential. However, in view of the non-defined nature of non-GAAP earnings and management's ability to portray non-GAAP earnings how it sees fit, evidence also suggests that management may use non-GAAP earnings strategically. In this regard, investors and analysts should be concerned that EBITDA, a seemingly standardised non-GAAP earnings measure, may be used for strategic reasons by management. Whether this is, indeed, true is open to research. Nevertheless, this study contributes to this field of

enquiry by providing evidence as to whether the quality of EBITDA disclosure is consistent with such strategic intent on the part of management.

Ultimately, this section provided a link between the main purpose of financial reporting and the disclosure of non-GAAP earnings. Figure 5 below summarises this link by illustrating how the purpose of financial reporting, namely, to provide decision-useful information, is linked to the information gap that so often exists between management and users. Figure 5 then illustrates that the disclosure of non-GAAP earnings may help to overcome this information gap by providing decision-useful information despite the fact that, at the same time, its undefined nature creates an opportunity for earnings management.

Figure 5: Relationship between the purpose of financial reporting and non-GAAP earnings



Source: Own observation

This section discussed the link between the purpose of financial reporting and the role of non-GAAP earnings, such as EBITDA, in helping to fulfil that purpose. The section also highlighted the opportunity in relation to earnings management which non-GAAP earnings disclosure presents. The next section discusses how reconciliations between non-GAAP earnings and GAAP earnings facilitate decision-useful information, thereby limiting the strategic use of non-GAAP earnings. Section 2.4 expands further on the graphical link

depicted in Figure 5 above to illustrate how the voluntary disclosure of non-GAAP earnings is linked to the quality of the reconciling information.

2.4 THE ROLE OF RECONCILIATIONS IN ACHIEVING A FAITHFUL REPRESENTATION IN ORDER TO PROVIDE DECISION-USEFUL INFORMATION

The previous section identified the usefulness of non-GAAP earnings in providing decision-useful information although it also highlighted that non-GAAP earnings disclosures may be used opportunistically. Existing literature provides evidence that suggests that higher quality reconciliations between non-GAAP and GAAP earnings are associated with less mispricing of company shares and also that investors and analysts view voluntarily disclosed non-GAAP earnings as more reliable when accompanied by a quantitative reconciliation. The relevant literature is discussed below. The section also discusses score sheets that are used to measure reconciliation quality between non-GAAP earnings and GAAP earnings.

2.4.1 The use of reconciliations between non-GAAP earnings and GAAP earnings to influence investor perceptions and reduce mispricing

Using an experimental research design, Elliott (2006) investigated how an emphasis on non-GAAP earnings in a company's press release, together with the disclosure of quantitative reconciliations between non-GAAP and GAAP earnings, impact on the judgements of both professional and non-professional investors. Elliott (2006: 118) differentiates between disclosed information that enables a reconciliation between non-GAAP earnings and GAAP earnings to be performed, and the information which is provided in the structured form of a quantitative reconciliation. She argues that the information provided in a quantitative

reconciliation makes it easier to process the information, thereby impacting on the decision-making process of investors. Elliott (2006: 130) found that non-professional investors, proxied by students studying for the degree of Master in Business Administration, are influenced by the emphasis placed on non-GAAP earnings although such influence may be mitigated when a quantitative reconciliation is provided. However, Elliott (2006: 128) found no evidence that the disclosure of a quantitative reconciliation affects non-professional investors' perceptions of either the relevance or the reliability of non-GAAP earnings. In contrast, Elliott found that professional investors, proxied by sell-side analysts, are not influenced by the emphasis placed on non-GAAP earnings (2006: 123). However, Elliott (2006: 128) found evidence suggesting that professional investors perceive non-GAAP earnings to be more reliable when accompanied by quantitative reconciliations.

Allee *et al.* (2007) complemented the research of Elliott (2006) by using an archival research design to investigate the association between the intra-day trading behaviour of professional and non-professional investors, and non-GAAP earnings disclosure in press releases. Allee *et al.* (2007: 220) found no evidence to suggest that the disclosure of quantitative reconciliations affects the trading decisions of either professional or non-professional investors. Their finding that professional investors are unaffected by the disclosure of quantitative reconciliations appears contrary to the findings of Elliott (2006). However, the differences in the research designs and related samples should be considered when comparing the findings of the two studies. Elliott's (2006: 128) experiment investigated how professional investors' perception of the reliability of non-GAAP earnings change when a quantitative reconciliation is disclosed vis-à-vis when a reconciliation is omitted. In contrast, Allee *et al.* (2007) investigated the association between aggregate market reaction to press releases in which non-GAAP earnings are emphasised, and whether the market reaction changes when a reconciliation between non-GAAP earnings and GAAP earnings is

disclosed. Allee *et al.* (2007: 220) did, however, recognise that the proxies they used may have resulted in incorrect inferences with regards to their findings on the value relevance of reconciliations. Consequently, Allee *et al.* (2007: 220) called for further research into the use and value relevance of reconciliations between non-GAAP and GAAP earnings.

The call for further research referred to above has been addressed by Marques (2010: 130), Zhang and Zheng (2011: 198) and Aubert and Grudnitski (2014: 162). The research of both Marques (2010: 120) and Zhang and Zheng (2011: 187) attempted to provide evidence of the effectiveness of the SEC Regulation G, issued in 2003, that requires US listed companies to provide a quantitative reconciliation between non-GAAP and GAAP earnings in any form of company report in which non-GAAP earnings are disclosed. Regulation G was issued following the SEC's concern that investors may be misled by non-GAAP earnings. However, in view of the fact that Regulation G contains no specific formatting requirement in respect of the quantitative reconciliation, management may choose the way in which it explains the reconciling items.

Marques (2010: 129) investigated the information content of quantitative tabular reconciliations vis-à-vis other methods of explaining reconciling items, for example, the disclosure of reconciling information through narrative explanations, either by explaining the nature, or the nature and amounts of the adjustments. Marques (2010: 129) showed that the disclosure of tabular reconciliations are statistically significantly associated with abnormal returns which suggests that investors find the additional information provided by tabular quantitative reconciliations to be more useful than narrative explanations in disclosing decision-useful information. In particular, Marques (2010: 126) found, in the post Regulation G period (i.e. when quantitative reconciliations are required) that, of her sample of 708 US listed companies, 11% did not provide a tabular reconciliation, 5% provided an explanation

of the nature of the reconciling differences only and 10% provided no reconciliation. It is unclear whether the management of those companies were simply not complying with the requirements of Regulation G, or whether they perceived their manner of disclosure as adequate in enabling a reconciliation between non-GAAP and GAAP earnings. For example, when disclosing seemingly defined measures such as EBITDA, management may consider the measure as self-explanatory in terms of how it is derived from GAAP earnings. This may, perhaps, explain the 10% of companies in Marques's study (2010: 126) that did not provide a reconciliation.

Zhang and Zheng (2011: 188) investigated whether the quality of the reconciliation between non-GAAP earnings and GAAP earnings is associated with more accurate pricing of company shares. They quantified the quality of reconciliations between non-GAAP and GAAP earnings by using the ordinal scale presented in Table 1 below.

Table 1: Reconciliation score sheet used by Zhang and Zheng (2011)

Type of reconciliation	Disclosure score (from lowest to highest quality)
No disclosure of the nature or amounts of adjustments	0
Narrative disclosure of the nature of adjustments only	1
Narrative disclosure of both the nature and amounts of adjustments	2
Disclosure of both the GAAP and non-GAAP income statements	3
Disclosure of a reconciliation table between GAAP and non-GAAP earnings	4

Source: Zhang and Zheng (2011: 188)

Zhang and Zheng's (2011) study provided insight into the effectiveness of SEC Regulation G, which requires a quantitative reconciliation between non-GAAP and GAAP earnings (see section 2.5.1 for further information on Regulation G). Disclosure by means of scores one

and two means that the disclosure is in narrative format and not provided in a tabular reconciliation. From their sample of 1295 quarterly press releases of US-listed companies that reported non-GAAP earnings during the post Regulation G phase, Zhang and Zheng (2011: 195) found that 97% of the sample exceeded the reconciliation quality of two during this phase. This implied that those companies deemed themselves to be meeting the requirement of Regulation G, i.e. to disclose a quantitative reconciliation between non-GAAP and GAAP earnings, by either disclosing both the non-GAAP and GAAP income statements, or by disclosing a reconciliation table between non-GAAP and GAAP earnings. In the absence of a quantitative reconciliation, investors, particularly sophisticated investors, may still be able to infer from the income statement what the reconciling items between non-GAAP and GAAP earnings are. In that case, a numerical reconciliation may not provide any incremental information and, in contrast to the objective of Regulation G, the disclosure of a numerical reconciliation will not be associated with more accurate pricing of company shares (Zhang & Zheng, 2011: 187). However, based on their results, Zhang and Zheng (2011: 187) suggest that the quality of reconciling information is associated with more accurate pricing of company shares. The findings are, therefore, consistent with the premise that the disclosure of complete information provides decision-useful information that enables more accurate pricing of company shares.

Whereas Zhang and Zheng (2011: 189) investigated US companies, Aubert and Grudnitski (2014) provided evidence on European companies that supported the findings by Zhang and Zheng (2011) that higher quality reconciliations between non-GAAP and GAAP earnings are associated with less security mispricing. In contrast to Zhang and Zheng (2011: 188), Aubert and Grudnitski (2014: 157) used the three point scale to measure reconciliation quality, as set out in Table 2 below.

Table 2: Reconciliation score sheet used by Aubert and Grudnitski (2014)

Type of reconciliation	Disclosure score (from lowest to highest quality)
No reconciling information is provided on GAAP earnings	1
Narrative disclosure of the nature of adjustments	2
Disclosure of both the nature and amounts of adjustments	3

Source: Aubert and Grudnitski (2014: 157)

The reconciliation quality of three, used by Aubert and Grudnitski (2014) encompassed side-by-side reconciliations, as well as quantitative tabular reconciliations of both non-GAAP earnings and GAAP earnings (scores four and five used by Zhang and Zheng (2011) above). This meant that the scale used by Aubert and Grudnitski (2014: 157) would not be able to distinguish between the information content provided by pure narrative explanations versus that provided by tabular quantitative reconciliations.

Collectively, the findings by Marques (2010), Zhang and Zheng (2011) and Aubert and Grudnitski (2014) found that reconciliations between non-GAAP and GAAP earnings contain information for investors and, moreover, that higher quality reconciliations are associated with less mispricing of company shares. Higher quality reconciliations are those that provide a quantitative tabular reconciliation between non-GAAP earnings and GAAP earnings. On the other hand, lower quality reconciliations may only explain reconciling items through the narratives in press releases. These findings are in line with the Conceptual Framework requirement that decision-useful information is obtained when relevant financial information is faithfully represented; that is, among other things, the information provides a complete depiction of all the information necessary to understand a particular economic phenomenon (IASB, 2018a, chap. 2.13). Accordingly, both theory and evidence provide support for the

assertion that more complete and transparent disclosure decreases the risk that investors will misunderstand or misinterpret the performance of a company (Young, 2014: 453).

2.4.2 The views of investors and analysts on reconciliations between GAAP earnings and non-GAAP earnings

From a survey conducted among 85 investment professionals from various countries⁹ the accounting firm Pricewaterhousecoopers (PWC) concluded that non-GAAP earnings disclosure may be enhanced when companies provide a reconciliation between non-GAAP earnings and GAAP earnings (PWC, 2014). Furthermore, PWC concluded that the reconciliation should be in bridge chart or table format, with the reconciling items clearly shown.

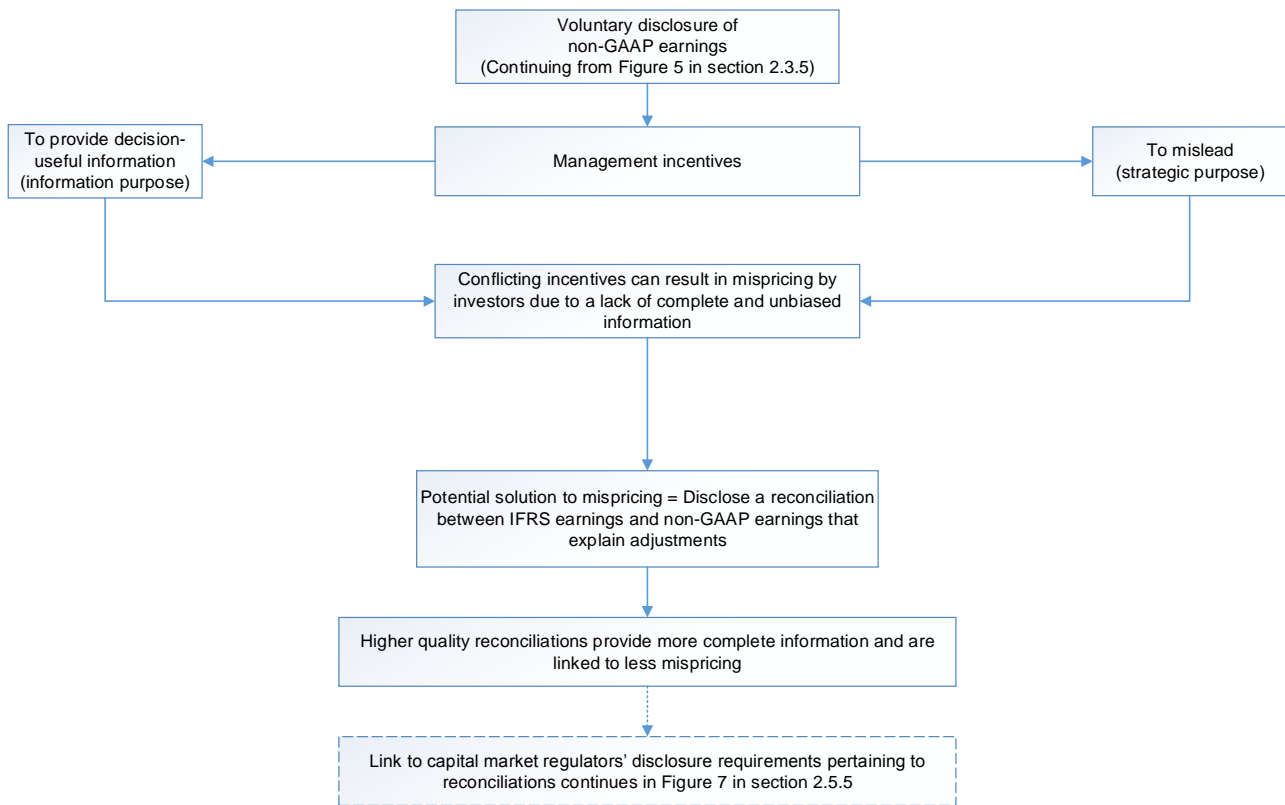
The need for improved reconciliations was also identified in a recent member survey by the CFA Institute. In its global survey of 558 respondents (a 3.5% response rate), less than 30% of respondents found the reconciliations between non-GAAP earnings and GAAP earnings, as contained in all forms of financial reporting, to be adequate (Papa *et al.*, 2016: 61). One major shortcoming identified was that reconciliations should provide a better disaggregation of adjustments between non-GAAP earnings and GAAP earnings (Papa *et al.*, 2016: 65). Another shortcoming that the survey highlighted was that financial reports often reconciled non-GAAP earnings to undefined earnings measures, such as operating profit (Papa *et al.*, 2016: 64).

⁹ The sample comprised investment professionals from the UK, the US, Europe, Asia Pacific and other smaller countries. The investment professionals included equity analysts, fixed income analysts, rating agencies, portfolio managers, chief investment officers and heads of research.

2.4.3 Conclusion

This section discussed the importance of disclosing reconciliations between non-GAAP earnings and GAAP earnings to facilitate the provision of decision-useful information. The section also identified the score sheets that were used in prior studies to grade the quality of reconciling information. Based on these prior studies, the score sheet used in this study is developed in Chapter 3, section 3.3.2. Section 2.4 also showed both that the quality of the reconciliations plays an important role in reducing the mispricing of company shares and also that investors and analysts prefer higher quality reconciliations. Based on these findings, stock market regulators may, therefore, be justified in formulating disclosure regulations that force companies to disclose high quality reconciliations that clearly reconciles non-GAAP earnings and GAAP earnings.

Overall, this section provided a link between voluntary disclosed non-GAAP earnings and the use of reconciliations to facilitate decision-usefulness. Figure 6 below continues from Figure 5 in section 2.3.5 to summarise the link between the voluntary disclosure of non-GAAP earnings, the two opposing incentives management has when disclosing non-GAAP earnings information, and the mispricing of company shares that results from investors doubting the credibility of the information provided. The diagram in Figure 6 then links the risk of mispricing to a potential solution offered by the disclosure of high quality reconciling information between non-GAAP earnings and IFRS earnings. This link to the disclosure requirements pertaining to capital market regulators is expanded upon in section 2.5.5.

Figure 6: Relationship between voluntary disclosure and reconciliation quality

Source: Own observation

This section discussed the relationship between the voluntary disclosure of non-GAAP earnings and the importance of reconciliations in providing decision-useful information. The next section discusses the disclosure requirements of major capital market regulators pertaining to reconciliations between non-GAAP earnings and GAAP earnings. The graphical link provided in Figure 6 above continues in Figure 7 in section 2.5.5 in which the disclosure requirements of major capital market regulators in respect of non-GAAP reconciliations are summarised.

2.5 RECONCILIATIONS BETWEEN NON-GAAP EARNINGS AND GAAP EARNINGS: REGULATORY REQUIREMENTS

The previous section highlighted that higher quality reconciliations are preferred by both investors and analysts and may help to reduce the mispricing of company shares. This section identifies the disclosure requirements that some of the major capital market regulators around the world, including for example the USA, Europe and Australia, use in their attempt to mandate companies to provide a faithful representation of non-GAAP earnings. The section explains that the disclosure requirements are driven by regulators' concern that non-GAAP earnings are used by management for opportunistic reasons. The concern that non-GAAP earnings may be used to mislead investors has, to a large extent, been directed at the disclosure of non-GAAP measures outside of financial statements, for example, in press releases, directors' reports and other management commentary (Rainsbury *et al.*, 2015: 331). The reason for the concern pertaining to disclosure outside of financial statements is that accounting standards, such as IFRS and US GAAP, govern the preparation of financial statements but not the reporting elsewhere (Young, 2014: 455). Therefore, the manner and content of financial reporting outside of financial statements are more open to management discretion, unless subject to further regulations. For example, Regulation G (as discussed below) was issued by the SEC to address the particular concern that non-GAAP earnings disclosed in financial reports outside of financial statements may be misleading. This section concludes by examining JSE disclosure requirements pertaining to the disclosure of non-GAAP earnings in the SENS reports of companies which are not subject to the same disclosure requirements as annual financial statements.

2.5.1 United States: The SEC and Regulation G

The SEC issued Regulation G, effective since 2003, which requires US public companies to provide a quantitative reconciliation between non-GAAP earnings and their most directly

comparable GAAP earnings if non-GAAP earnings are disclosed in any report to the public (SEC, 2003). Regulation G was issued as a result of the SEC's concern that non-GAAP earnings may be used to mislead investors. The underlying motivation for issuing the regulation was the SEC's belief "that the reconciliation will provide the securities markets with additional information to more accurately evaluate companies' securities and, in turn, result in a more accurate pricing of securities" (SEC, 2003).

In a recent update to Regulation G, the SEC placed specific focus on EBITDA and emphasises that companies should reconcile EBITDA to GAAP earnings. However, the SEC specifically states that companies may not reconcile EBITDA to operating profit, which is an undefined measure of performance (SEC, 2018).

2.5.2 Europe: The European Securities and Market Authority

The European Securities and Market Authority (ESMA) is an independent EU authority that acts in a supervisory capacity over security regulators in the EU. The ESMA is responsible for compiling a single rulebook that governs the EU financial markets. The ESMA issued a guideline on alternative performance measures (i.e. non-GAAP earnings) that came into effect in 2016 (European Securities and Markets Authority (ESMA), 2015). The purpose of the guideline is to promote the usefulness and transparency of non-GAAP earnings in regulated reports. The ESMA believes that adherence to the guideline will enhance the comparability, reliability and understandability of non-GAAP earnings. Specific disclosure guidelines issued by the ESMA include the following:

- Par. 26: A reconciliation of the alternative performance measure to the most directly reconcilable line item, subtotal or total presented in the financial statements of the

corresponding period should be disclosed, separately identifying and explaining the material reconciling items (ESMA, 2015, para. 26).

- Par. 28: Where reconciling items are included in financial statements, users should be able to identify them in those financial statements. Where a reconciling item cannot be extracted directly from the financial statements, the reconciliation should show how the figure is calculated (ESMA, 2015, para. 28).
- Par. 29: Where an alternative performance measure is directly identifiable from the financial statements no reconciliation is required. This applies for example when an alternative performance measure is a total or subtotal presented in financial statements (ESMA, 2015, para. 29).

2.5.3 Australia: The Australian Securities and Investment Commission

In 2011 the Australian Securities and Investment Commission (ASIC) issued a guideline on the disclosure of non-GAAP earnings (ASIC refers to it as non-IFRS earnings) in financial reports and other corporate documents, such as market announcements (Australian Securities and Investments Commission (ASIC), 2011). The purpose of the guideline is to promote the full and clear disclosure of non-GAAP earnings in an attempt to minimise the risk that non-GAAP earnings are misleading. When presenting non-GAAP earnings, ASIC recommends that:

- A reconciliation between the non-IFRS and IFRS financial information should be provided, separately itemising and explaining each significant adjustment. Where reconciling items are components of IFRS financial information, they should be capable of being reconciled to the financial report. Where a reconciling item cannot be extracted directly from the financial report, the reconciliation should show how the figure is calculated (ASIC, 2011: 18).

2.5.4 South Africa: The JSE

The JSE requires listed companies to disclose their annual financial results on SENS. The financial report so disclosed should, inter alia, be prepared in accordance with the concepts stipulated in both the Conceptual Framework and the presentation and disclosure requirements of International Accounting Standard 34 *Interim Financial Statements* (IAS 34) (Johannesburg Stock Exchange Limited (JSE), 2017a, para. 8.57). However, a shortcoming of IAS 34 is that it is silent on specific disclosure requirements in instances where companies disclose non-GAAP earnings as a sub-total in the condensed interim statement of comprehensive income, or where they disclose non-GAAP earnings adjacent to the interim statement of comprehensive income. Furthermore, with the exception of two specific exceptions, the JSE does not have specific disclosure requirements pertaining to the disclosure of non-GAAP earnings in SENS reports. These two exceptions pertain to the disclosure of headline earnings (a non-GAAP earnings measure) and pro-forma information. In view of the fact that headline earnings is not defined in IFRS standards, it may be said to be a non-GAAP earnings measure. The JSE requires companies to disclose their headline earnings when reporting their annual results (JSE, 2017a). Specifically, a JSE-listed company must publish:

- in its interim and year-end results, headline earnings per share and diluted headline earnings per share together with an itemised reconciliation between headline earnings and the earnings used in the calculation (JSE, 2017a, para. 8.58).

Pro-forma information, where information is presented as if a specific event had occurred, is required only for specific corporate actions undertaken by the company, such as the issue of new shares (South African Institute of Chartered Accountants (SAICA), 2014).¹⁰

If one considers the JSE requirement that the condensed financial statements should be prepared in accordance with the framework concepts of IFRS, one may argue that this also requires companies to disclose sufficient information that reconciles non-GAAP earnings to IFRS earnings to enable users to understand how non-GAAP earnings measures explain the performance of a company. As stated earlier, the IFRS framework, namely, the Conceptual Framework, states that in order for information to be useful, it must be a faithful representation and it must be relevant (IASB, 2018a, chap. 2.4). An underlying characteristic of faithful representation is completeness (IASB, 2018a, chap. 2.12). According to the Conceptual Framework (IASB, 2018a, chap. 2.13), “[a] complete depiction includes all information necessary for a user to understand the phenomenon being depicted, including all necessary descriptions and explanations” and that “[f]or some items, a complete depiction may also entail explanations...[of] the process used to determine the numerical depiction”.

It may, therefore, be argued that, for the management of a JSE-listed company to provide a complete depiction of non-GAAP earnings in the company's SENS report, an explanation of the way in which the non-GAAP earnings is calculated should be provided. Such an explanation would result in information which is a faithful representation and, therefore, also decision-useful. However, the Conceptual Framework is not clear on how a company should

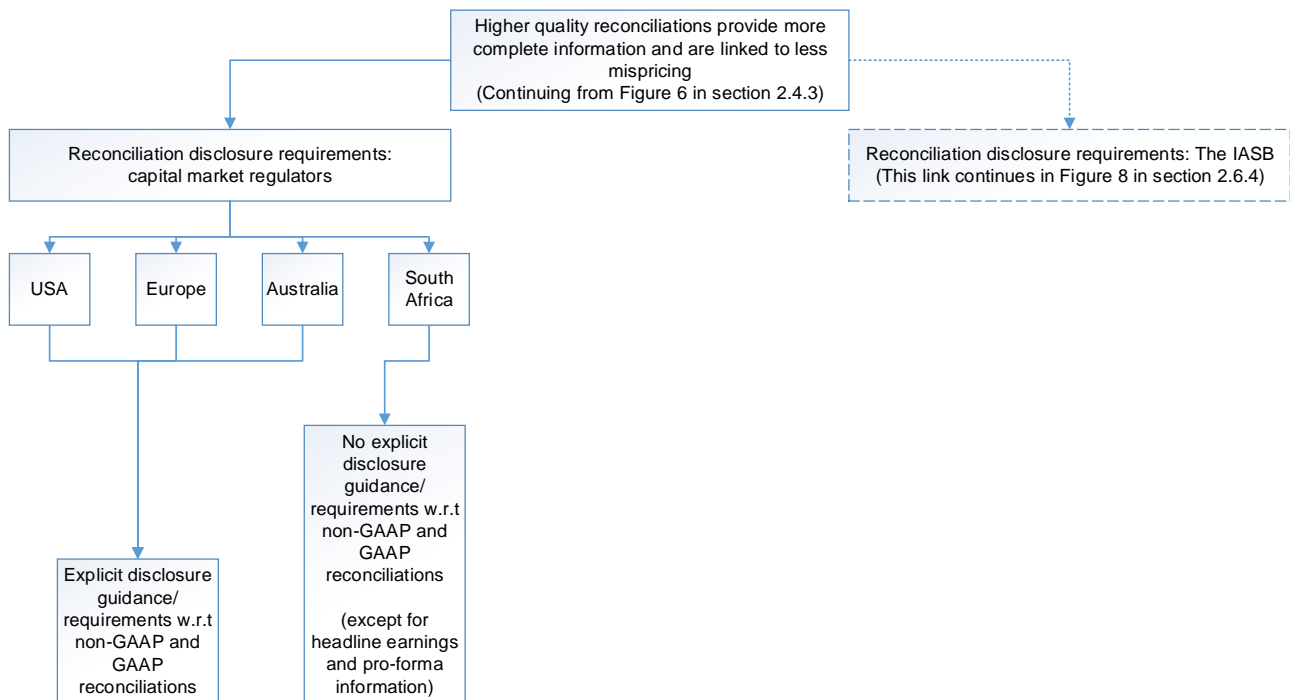
¹⁰ Companies in the US use the term ‘pro-forma earnings’ when referring to non-GAAP earnings (Zeff, 2007: 297).

explain an amount in order to ensure a complete depiction of such an amount. For example, it is unclear whether a complete depiction is obtained when a company provides the link between non-GAAP earnings and IFRS earnings by explaining the nature of the reconciling differences, or by providing both the nature and amounts of the reconciling differences, or by providing a quantitative reconciliation in tabular format. This lack of clarity in the Conceptual Framework may lead to different interpretations by different companies and this may result in information that is insufficiently explained and, hence, the mispricing of company shares. In answering the research question, this study provides evidence that confirms that diversity exists in the way in which South African companies view the requirement to provide complete information (see section 4.2.1).

The JSE's lack of specific guidance or regulation pertaining to the disclosure of non-GAAP earnings may create an opportunity for management to use non-GAAP earnings disclosure in order to mislead investors. Indeed, Howard (2016: 85) found evidence in the manner in which JSE-listed companies disclose non-GAAP earnings in their annual reports that is consistent with opportunistic disclosure purposes. A potential remedy to mitigate this risk may lie in the JSE establishing disclosure rules with regards to non-GAAP earnings, similar to the SEC in the US. Since the JSE uses the disclosure requirements of IFRS standards as a starting point in respect of the information that JSE-listed companies are mandated to disclose, any potential remedy should be seen together with the IASB's purpose to ensure that financial reporting provides decision-useful information. Section 2.6 examines the IASB's existing and proposed disclosure requirements pertaining to non-GAAP earnings in greater detail.

2.5.5 Conclusion

The previous section highlighted the importance of reconciliations in providing decision-useful information. The importance that capital market regulators attach to reconciliations was discussed in section 2.5. From a regulatory point of view, disclosure transparency may be achieved when companies provide a reconciliation between non-GAAP earnings and the most directly comparable GAAP earnings. Such a reconciliation should be in numerical format and the nature of the adjustments clearly identified. However, with the exception of headline earnings and pro-forma information, the JSE does not have specific disclosure requirements when a company discloses other types of non-GAAP earnings. This shortcoming in explicit disclosure requirements provides management with the option to choose how completely they disclose the link between non-GAAP earnings and IFRS earnings. If management discloses non-GAAP earnings for strategic reasons, they are able to obscure their intent by providing investors with less complete disclosure. Since the JSE disclosure requirements rely heavily on IFRS requirements, the next section examines in more detail both existing and proposed IFRS disclosure requirements pertaining to non-GAAP disclosure. Figure 7 below continues from Figure 6 in section 2.4.3 by summarising the disclosure requirements pertaining to major capital market regulators in respect of reconciliations between non-GAAP earnings and GAAP earnings.

Figure 7: Reconciliation disclosure requirements of major capital market regulators

Source: Own observation

This section discussed the non-GAAP earnings disclosure requirements of major capital market regulators. The next section discusses the relevant requirements in IFRS standards.

2.6 DISCLOSURE REQUIREMENTS IN IFRS STANDARDS: EXISTING AND PROPOSED

The previous section concluded by highlighting that the JSE rely heavily on IFRS disclosure requirements to ensure that companies provide decision-useful information. This section begins by identifying the various earnings measures defined in IFRS standards. It then examines the existing disclosure requirements in IFRS standards pertaining to non-GAAP earnings and, lastly, it examines how the IASB proposes to improve existing disclosure

requirements pertaining to non-GAAP earnings and identifies one important shortcoming in the IASB proposed requirements.¹¹

2.6.1 Defining IFRS earnings

In order to distinguish between IFRS earnings (i.e. GAAP earnings) and non-IFRS earnings (i.e. non-GAAP earnings), it is necessary to define the IFRS earnings measures. In terms of IFRS standards, a company's financial performance is presented in the statement of comprehensive income (SCI). IAS 1 *Presentation of Financial Statements* (IAS 1) (IASB, 2017d, para. 81A) requires companies to present in the SCI the following in relation to the financial period in question:

- Profit or loss;
- Total other comprehensive income; and
- Comprehensive income for the period, being the total of profit or loss and other comprehensive income.

Profit or loss is defined in IAS 1 (IASB, 2017d, para. 7) as “the total of income less expenses, excluding the components of other comprehensive income”. Other comprehensive income is defined in IAS 1 (IASB, 2017d, para. 7) as comprising “items of income and expense (including reclassification adjustments) that are not recognised in profit or loss as required or permitted by other IFRSs.” It is, thus, clear that the calculation of both profit or loss, and other comprehensive income is clearly defined. Furthermore, for profit or loss and comprehensive income, IAS 1 (IASB, 2017d, para. 81B) requires separate disclosure on the

¹¹ As stated earlier, when referring to IFRS earnings, the term ‘non-GAAP earnings’ means ‘non-IFRS earnings’.

face of the SCI between the respective amounts attributable to both non-controlling interests and the owners of the parent company.

Companies with discontinued operations are required by IAS 1 (IASB, 2017d, para. 82) to present a single amount for the after tax profit or loss incurred by the discontinued operation. IFRS 5 *Non-current Assets Held for Sale and Discontinued Operations* (IASB, 2017e, para. 33) also stipulates that the profit or loss from discontinued operations should be clearly distinguished from the profit or loss from continuing operations. Profit or loss from continuing operations is therefore implicitly defined in IFRS standards as constituting the profit or loss of the company, excluding any profit or loss from discontinued operations.

IAS 33 *Earnings per Share* (IASB, 2017f) prescribes the basis to be used in calculating basic and diluted earnings per share. In terms of IAS 33 (IASB, 2017f, para. 9), earnings comprise the “profit or loss attributable to ordinary equity holders of the parent entity and, if presented, profit or loss from continuing operations attributable to those equity holders”.

IAS 12 *Income Taxes* (IASB, 2017g) prescribes the recognition and measurement of tax expenses and requires disclosure of the relationship between tax expense and profit before tax (IASB, 2017g, para. 81). As profit or loss is defined, profit before tax is implicitly defined as an IFRS earnings measure.

In summary, the IFRS earnings measures include any of the following:

- Profit or loss before tax
- Profit or loss for the year

- Profit or loss from continuing operations
- Profit or loss from discontinued operations
- Total other comprehensive income
- Comprehensive income
- Earnings per share (basic or diluted)

2.6.2 Existing IFRS disclosure requirements relating to non-GAAP earnings

In IFRS standards the disclosure requirements pertaining to non-GAAP earnings are addressed in both IAS 1 and IAS 33. IFRS 8 *Operating Segments* (IFRS 8) include disclosure requirements where non-GAAP earnings is reported for a reportable segment (IASB, 2017h, para. 23). However, since the focus of this study is on earnings measures representing the consolidated performance of a JSE-listed company or group, rather than on a reportable segment, the requirements of IFRS 8 are not discussed in more detail. IAS 1 (IASB, 2017d) addresses how companies should present non-GAAP earnings in their financial statements. However, because IFRS standards apply only to general purpose financial statements (IASB, 2017i, para. 7), IAS 1 does not apply to the disclosure of non-GAAP earnings in reports other than financial statements as defined in IAS 1. For example, IFRS standards do not cover disclosure in earnings releases, directors' reports and other stakeholder reports (IASB, 2017d, para. 13).

Although non-GAAP earnings are not defined in IFRS standards, if management considers a measure to provide information that is relevant to the understanding of the company's performance, then management may include non-GAAP earnings as a line item in the statement of comprehensive income (IASB, 2017d, para. 85). In such a case IAS 1 requires the following disclosure:

- An entity shall present the line items in the statement(s) presenting profit or loss and other comprehensive income that reconcile any subtotals presented in accordance with paragraph 85 with the subtotals or totals required in IFRS for such statement(s) (IASB, 2017d, para. 85B).

IAS 33 (IASB, 2017f) addresses how companies should calculate and present earnings per share in their financial statements. When companies report non-GAAP earnings per share, IAS 33 (IASB, 2017f, para. 73) requires that the calculation be done in the same manner as that used for earnings per share. Furthermore, IAS 33 stipulates:

- If a component of the statement of comprehensive income is used that is not reported as a line item in the statement of comprehensive income, a reconciliation shall be provided between the component used and a line item that is reported in the statement of comprehensive income (IASB, 2017f, para. 73).

Where IAS 1 covers the presentation of annual financial statements, IAS 34 addresses the content of interim financial statements. In contrast to IAS 1, IAS 34 is silent on whether specific requirements apply when companies disclose non-GAAP earnings as sub-totals in the statement of comprehensive income. Furthermore, IAS 34 contains no requirement for companies that disclose non-GAAP earnings adjacent to their condensed financial statements to reconcile the non-GAAP earnings to the IFRS earnings.

It is clear from the existing IFRS disclosure requirements that IFRS standards cover only instances where non-GAAP earnings are disclosed in the financial statements and not when reported in other manners of communication, such as earnings releases in SENS reports. When companies report non-GAAP earnings in their financial statements, IFRS standards require a reconciliation with the IFRS earnings although it is unclear whether a specific

format is required. From the perspective of IAS 34, companies are free to disclose non-GAAP earnings adjacent to their IFRS financial results when providing condensed financial statements on SENS, without being required by IAS 34 to define non-GAAP earnings or to disclose a reconciliation of non-GAAP earnings to IFRS earnings.

Based on the above discussion, it is clear that, where companies disclose non-GAAP earnings in their SENS reports, the lack of explicit disclosure requirements in IFRS standards present management with an opportunity to disclose less complete information in order to attain their own strategic goals. This problem of opportunistic disclosure is investigated in this study in section 4.4. The next section discusses proposals by the IASB to improve the disclosure quality of non-GAAP earnings.

2.6.3 Proposed IFRS disclosure requirements relating to non-GAAP earnings

The IASB is in the process of devising a disclosure initiative in terms of which the quality of financial reporting disclosure can be improved. Specific attention is being paid to the disclosure of non-GAAP earnings, not only in the financial statements but also in instances where non-GAAP earnings are disclosed adjacent to the financial statements (IASB, 2017a, para. 5.29b). Particular concerns raised by IASB constituents regarding non-GAAP earnings in financial reports, and which the IASB is attempting to resolve, include the following (researcher's own emphasis added):

- It is difficult to understand how some performance measures are calculated because either the **calculations are not explained** by the entity, or the performance measures are **labelled unclearly** (IASB, 2017a, para. 5.11a).
- It is **not clear how some performance measures relate to other amounts in the financial statements**; (IASB, 2017a, para. 5.11b).

- It is difficult to compare some performance measures disclosed by different entities because such **measures do not reflect standardised definitions**, for example, the EBITDA calculation differs among entities (IASB, 2017a, para. 5.11d).
- **Some performance measures are misleading** because they do not present a neutral picture of the entity in question (IASB, 2017a, para. 5.11f).

In addressing these concerns the IASB has tentatively decided that a faithful representation of non-GAAP earnings in, or adjacent to the financial statements, may be obtained if non-GAAP earnings is “reconciled to the most directly comparable measure specified in IFRS standards to enable users of financial statements to see how the performance measure has been calculated” (IASB, 2017a, para. 5.34b). However, the tentative disclosure requirement includes no specific requirement in respect of either the format or the detail in which the reconciliation should be provided. Unlike Regulation G mentioned earlier, which requires a quantitative reconciliation, it is unclear whether the IASB’s intended requirement will be met if a narrative explanation of the nature of the reconciling differences is provided. In part, this lack of detail in relation to specific requirements may be attributed to the IASB’s stance in establishing principle-based, rather than rule-based, accounting standards (Barth, 2008: 1161). Thereby the manner in which to disclose information is left to the discretion of management.

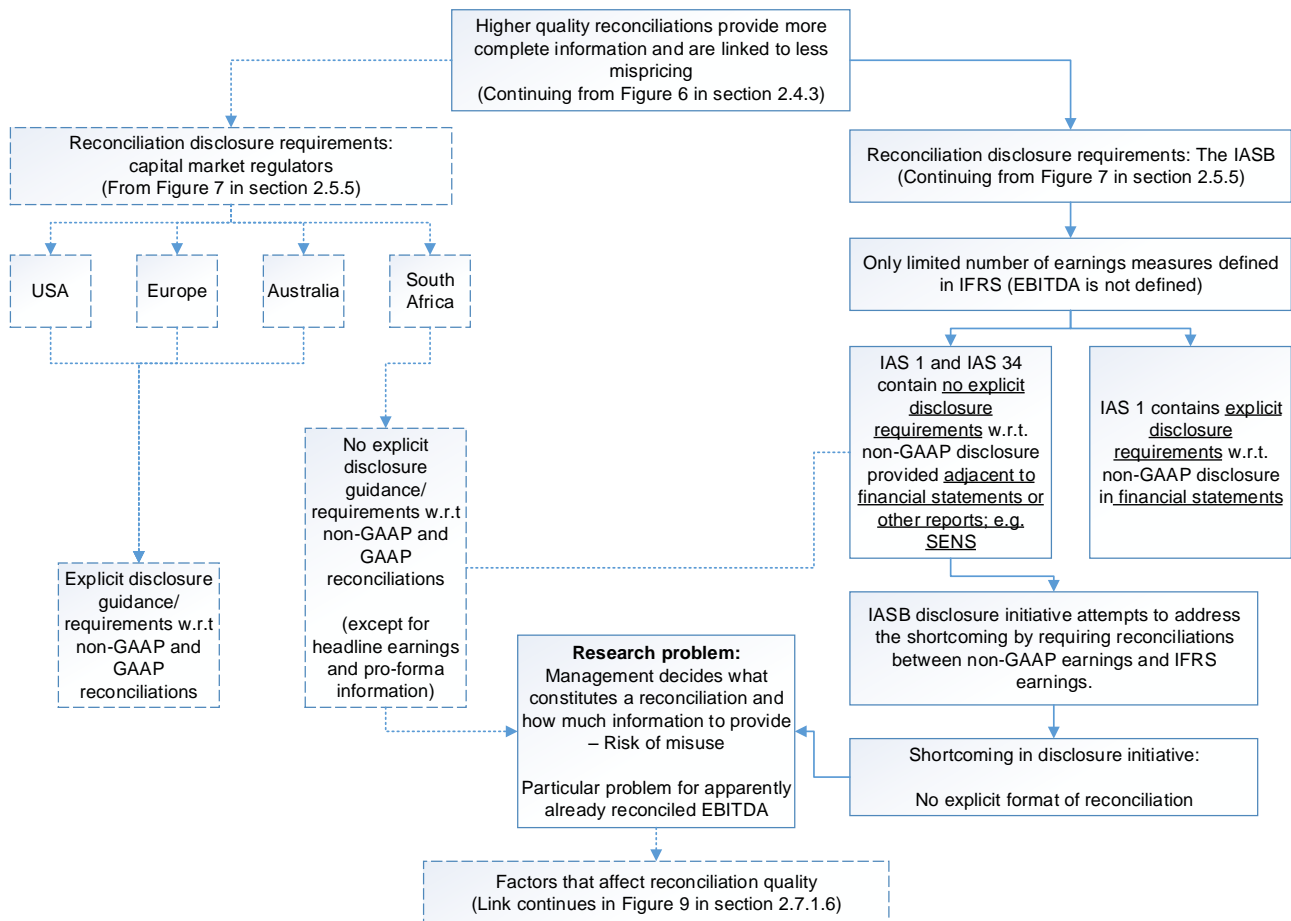
In the absence of a specific format in which the reconciliation should be disclosed, it is unclear whether the IASB’s intended disclosure requirement (i.e. to disclose a reconciliation) will lead to decision-useful information. In addition, prior evidence has linked higher quality reconciliations between non-GAAP earnings and GAAP earnings with less mispricing of company shares, thus suggesting that, in such instances, investors are then provided with decision-useful information.

Accordingly, a potential shortcoming in the IASB's tentative decision to require a reconciliation is that the requirement is not sufficiently explicit. It leaves it open to management to decide on the format and level of detail required in presenting a reconciliation between non-GAAP earnings and IFRS earnings. For example, it is unclear whether a narrative explanation of the link between non-GAAP earnings and IFRS earnings may be seen as a sufficient reconciliation. This study investigates this shortcoming in sections 4.2 and 4.3.

2.6.4 Conclusion

The section established the earnings measures that are defined in IFRS standards. The earnings measures identified in this section will be used in Chapter 4 to address the first research objective, namely, to describe the nature of adjustments between EBITDA and IFRS earnings. The section also showed that existing IFRS requirements do not cover disclosure outside of financial statements, for example, annual results reported in SENS reports. Lastly, the section showed that, although the IASB proposes to improve existing requirements in order to include financial reports other than financial statements, the proposal is lacking in explicitness. The lack of explicit requirements as to how companies should provide reconciling information between IFRS earnings and non-GAAP earnings creates the potential for management to hide its opportunistic intent of non-GAAP earnings through non-transparent disclosure. Figure 8 below summarises the findings in this section. It continues from Figure 7 in section 2.5.5 by adding the IASB's existing and proposed disclosure requirements. Figure 8 also links the shortcomings in the disclosure requirements of both the JSE and IASB to the research problem as stated in section 1.2.

Figure 8: Reconciliation disclosure requirements of the IASB and JSE linked to research problem



Source: Own observation

This section identified the IFRS requirements pertaining to the reconciliations of non-GAAP earnings. The next section investigates factors that may affect the quality of reconciliations between non-GAAP earnings and GAAP earnings. The aim of this investigation is to determine whether factors associated with opportunistic disclosure are linked to the quality of reconciliation disclosure. Figure 9 in section 2.7.1.6 continues from Figure 8 above to illustrate the link between the research problem and the factors affecting reconciliation quality.

2.7 FACTORS AFFECTING RECONCILIATION QUALITY

The previous sections highlighted that reconciliations are deemed by both capital market regulators and the IASB to play an important role in providing more complete information. This section identifies factors associated with reconciliation quality as well as specific factors associated with opportunistic disclosure. It also documents whether reconciliation quality may be expected to be either positively or negatively associated with the various factors identified.

2.7.1 Factors associated with reconciliation quality

This study used the study by Zhang and Zheng (2011), performed in the USA, as the primary input in identifying factors affecting reconciliation quality. The reason for this decision is that the determinant regression model of Zhang and Zheng (2011) is closely related to the model used in this South African study. Zhang and Zheng (2011: 189) include the following factors that may affect the quality of the reconciliation disclosed:

- The value relevance of GAAP earnings (section 2.7.1.1)
- Managerial incentives (section 2.7.1.2)
- Investor sophistication (section 2.7.1.3)
- Characteristics of adjustments between non-GAAP and GAAP earnings (section 2.7.1.4).

Zhang and Zheng (2011: 189) operationalised the first three factors indicated above by including the following proxies in their regression:

2.7.1.1 Proxies for value relevance

Variables that proxy for the value relevance of GAAP earnings are shown below.

- Frequency of prior year losses, measured as the number of consecutive quarters of losses during the prior eight quarters
- Earnings variability, measured as the standard deviation of returns on assets over the prior eight quarters
- Membership of high technology industry, measured as an indicator variable of one if a company is listed in the high technology sector
- Current losses, measured as an indicator variable of one if the company incurred a GAAP loss in the current period.

Higher scores on each of the four factors above are associated with a lower value relevance of the GAAP earnings which then increases the value relevance of non-GAAP earnings. Non-GAAP earnings are, therefore, perceived as a better measure to use to predict a company's future performance and are, therefore, associated with higher value relevance (Young, 2014: 450). As a result, all four factors above were expected to be positively associated with a higher quality of a reconciliation that explains why a non-GAAP earnings measure is more value relevant than the GAAP earnings. In line with this expectation, Zhang and Zheng (2011: 193) found that the coefficients on earnings variability and membership of a high technology industry were both positive and statistically significant. However, they (Zhang & Zheng, 2011: 193) also found that the frequency of prior period losses was not statistically significant. Furthermore, in contrast to the expectation relating to the coefficient of current losses, Zhang and Zheng (2011: 193) found that the coefficient on current losses was both negative and significant. Poor performance places management at risk of losing their employment and it is, therefore, to be expected that management will attempt to explain away the poor performance through more complete disclosure (Healy & Palepu, 2001: 421).

In order to explain their finding on the negative association between reconciliation quality and current losses, Zhang and Zheng (2011: 192) argue that the negative association is the result that companies with current year losses are, in general, more opportunistic.

2.7.1.2 Proxies for managerial incentives

Variables that proxy for management's incentives to report non-GAAP earnings that are intended to alter investors' perceptions about a company's GAAP performance include the following:

- Emphasis on non-GAAP earnings, measured as an indicator variable of one if a non-GAAP measure is mentioned prior to the GAAP earnings in the press release
- Avoid losses, measured as an indicator variable of one if non-GAAP earnings are greater than zero while GAAP earnings are less than zero
- Report non-GAAP earnings that beat the analysts' forecasts, measured as an indicator variable of one if the non-GAAP earnings meet or beat an analyst forecast while the GAAP earnings miss the forecast.

Based on her synopsis of existing literature on non-GAAP earnings disclosure, Marques (2017: 319) agrees that opportunistic behaviour is often associated with instances in which management places more emphasis on non-GAAP earnings than on GAAP earnings, and when non-GAAP earnings meet a specific earnings benchmark that GAAP earnings do not meet. Both the avoidance of losses and meeting or beating analyst forecasts as described above relate to management's attempt to meet or beat strategic benchmarks. In addition, Marques (2017: 319) also identified the adjustment of recurring items as an indication of opportunistic disclosure. This is discussed in more detail in section 2.7.1.4 below.

When opportunistically disclosing non-GAAP earnings, management may have incentives to avoid scrutiny by investors by disclosing a lower quality reconciliation (Zhang & Zheng, 2011: 189). Therefore, where management intends to mislead investors through non-GAAP earnings disclosure, it is to be expected that they will provide less information through lower quality reconciliations in order to limit the chance that the investors may discern their intent. To the extent that the above variables act as proxy for management incentive to mislead, all three variables may be expected to be negatively correlated with reconciliation quality. On the other hand, management may also have incentives to provide investors with their superior inside knowledge about a company's estimated future cash flows, by disclosing non-GAAP earnings that better reflects such an estimation than GAAP earnings. Since all three variables are associated with opportunistic disclosure, management may feel they should provide higher quality disclosure in order to enhance the credibility of the adjustments when one or more of the factors mentioned above are present. In such a case it is expected that management will disclose a higher quality reconciliation in an attempt to convince investors of the high quality of the non-GAAP earnings (Zhang & Zheng, 2011: 189).

Elliott (2006: 128) found that professional investors deem non-GAAP measures to be more reliable when more complete information, in the form of a reconciliation, is provided. In such an instance, it is expected that all three of the factors discussed above would be positively associated with reconciliation quality. The results from the study conducted by Zhang and Zheng (2011: 193) support the latter argument to some extent as their results show that the coefficients of the variable that proxy for emphasis of non-GAAP earnings and the variable that proxy for the avoidance of GAAP losses are both significant and positive. In contrast, Zhang and Zheng (2011: 193) found no association between instances where the GAAP earnings miss analysts' forecasts and reconciliation quality. However, Elliot (2006: 130) also showed that the judgements and decisions of non-professional investors, who may be more

easily misled than professional investors, tend to be influenced more by non-GAAP earnings when reconciliations between the non-GAAP earnings and GAAP earnings are not disclosed.

The findings in the abovementioned studies all pertain to studies conducted in the USA. From a South African perspective, Howard (2016) found evidence suggesting that South African companies disclose non-GAAP earnings for opportunistic reasons. In his population of 191 company-years for the period 2010 to 2014, Howard (2016: 69) found that companies adjusted more frequently for recurring expenses when calculating non-GAAP earnings. As discussed in greater detail in section 2.7.1.4 below, the adjustment of recurring expenses may be seen as invalid and as indicating opportunistic disclosure. Furthermore, using a logistic regression, Howard (2016: 79) showed that the non-GAAP earnings disclosed by companies are more likely either to meet or beat analyst forecasts when companies' GAAP earnings do not do this. Meeting or beating a benchmark such as analysts' forecasts is also associated with opportunistic disclosure (Marques, 2017: 321). Based on the evidence from Howard (2016) and in line with the earnings management theory discussed in section 2.2, it is expected that, in this study, the EBITDA reconciliation quality of companies will be negatively associated with the opportunistic factors discussed above.

2.7.1.3 Proxies for investor sophistication

Variables that proxy for the level of sophistication of the investors of a company are listed below:

- Analyst following, measured by the number of analysts following the company
- Institutional ownership, measured as the percentage of shares held by institutional investors.

In theory, increased voluntary disclosure leads to a decrease in the cost of information acquisition which in turn leads to an increase in the supply of information by intermediaries (Healy & Palepu, 2001: 430). Consequently, a higher analyst following is associated with more informative disclosure (Lang & Lundholm, 1993: 269), and is expected to be positively associated with reconciliation quality. In addition, institutional ownership is associated with a higher quality of disclosures (Isidro & Marques, 2013: 302) and is expected to be positively associated with reconciliation quality. However, Zhang and Zheng (2011: 193) found no evidence that either analyst following or institutional ownership is statistically significant in explaining reconciliation quality.

2.7.1.4 Characteristics of adjustments between non-GAAP earnings and GAAP earnings

The characteristics of the adjustments between non-GAAP earnings and GAAP earnings may influence the quality of reconciliations and are discussed below.

- The nature of adjustments
- The magnitude of adjustments
- The total number of adjustments between non-GAAP and GAAP earnings.

Nature of adjustments

Based on the categorisation used by Bhattacharya *et al.* (2003: 312), Zhang and Zheng (2011: 189) distinguished between eleven categories of adjustments made between non-GAAP and GAAP earnings. Similarly, for his South African population of non-GAAP reporters, Howard (2016: 63) also used similar categories. A comparison between the categorisation used by the three studies mentioned above is included in Table 3 below.

Based on these categories, Chapter 3, section 3.4.1.1 focuses on the categories used in this study.

Table 3: Main categories of adjustments between GAAP earnings and non-GAAP earnings

	Bhattacharya et al. (2003: 312)	Zhang and Zheng (2011: 189)	Howard (2016: 63)
	Acquired in-process research and development costs written off	Acquired in-process research and development costs written off	
	Below the line items, which include extraordinary items, discontinued operations and the effect of changes on accounting policies	Below the line items, which include extraordinary items, discontinued operations and the effect of changes on accounting policies	
		Restructuring charges	Transaction and restructuring costs
		Write-offs due to asset impairment	Impairment of assets
	Depreciation and amortisation	Depreciation and amortisation excluding amortisation on stock based compensation, intangibles and goodwill	Depreciation and amortisation
		Intangible asset amortisation	
	Gains or losses from asset disposals	Gains or losses from asset disposals	Gains or losses on asset disposals
	Stock based compensation costs	Stock based compensation costs	Share based compensation costs
	Merger and acquisition costs	Merger and acquisition costs	
	Other specific adjustments	Other specific adjustments	Other
			Operating item/below the line
			Tax related
	No adjustment details provided in the press release	No adjustment details provided in the press release	Undeterminable

Sources: Bhattacharya et al. (2003: 312), Zhang and Zheng (2011: 189) and Howard (2016: 63)

Adjusting for recurring items when calculating non-GAAP earnings is also associated with opportunistic disclosure (Marques, 2017: 319). While restructuring costs, impairment expenses and income, and the effect of non-current asset disposals may be seen as valid adjustments, Black and Christensen (2009: 312) argue that adjusting for share-based payments is invalid with invalid adjustments in this context denoting adjusting for opportunistic purposes. Zhang and Zheng (2011: 193) found that the adjustment for share-based costs is negatively associated with reconciliation quality. These findings, consistent with opportunistic disclosure purposes, suggest that poor quality reconciliations are used in order to hide the adjustment made for share-based costs. Bhattacharya *et al.* (2003) further argued that adjusting for operating income and expense items is considered to be invalid and may point to opportunistic disclosure. Expanding on this view, Howard (2016: 63) identified legal expenses as a specific operating item that may indicate opportunistic disclosure.

Magnitude of adjustments

Zhang and Zheng (2011: 189) expected the deviation of the absolute value of the difference between non-GAAP earnings per share and GAAP earnings per share, deflated by total assets per share, to be positively correlated with reconciliation quality as this warrants a more detailed explanation of the differences. However, they found no evidence to support this assertion as they found that the variable was not statistically significant in explaining reconciliation quality.

Number of adjustments

Zhang and Zheng (2011: 189) expected that investors would require a more detailed reconciliation when the difference between non-GAAP and GAAP earnings are made up by a higher number of adjusting items. They used the natural log of the total number of

adjustments between non-GAAP earnings and GAAP earnings as an indication of the number of adjustments. They expected there to be a positive association between this total number of adjustments and reconciliation quality. Consistent with this expectation they found that the number of adjustments was, indeed, positively associated with reconciliation quality.

Lougee and Marquardt (2004: 778–779) also identified the following additional factors that may influence management's decision to provide voluntary disclosure of non-GAAP earnings, namely, intangible intensity, growth and leverage. Companies with a higher level of intangible assets, a higher growth rate, and higher leverage are more likely to engage in non-GAAP reporting. The impact of these factors on the quality of reconciliations remains, however, unclear. These factors are, therefore, excluded from this study.

2.7.1.5 Other factors

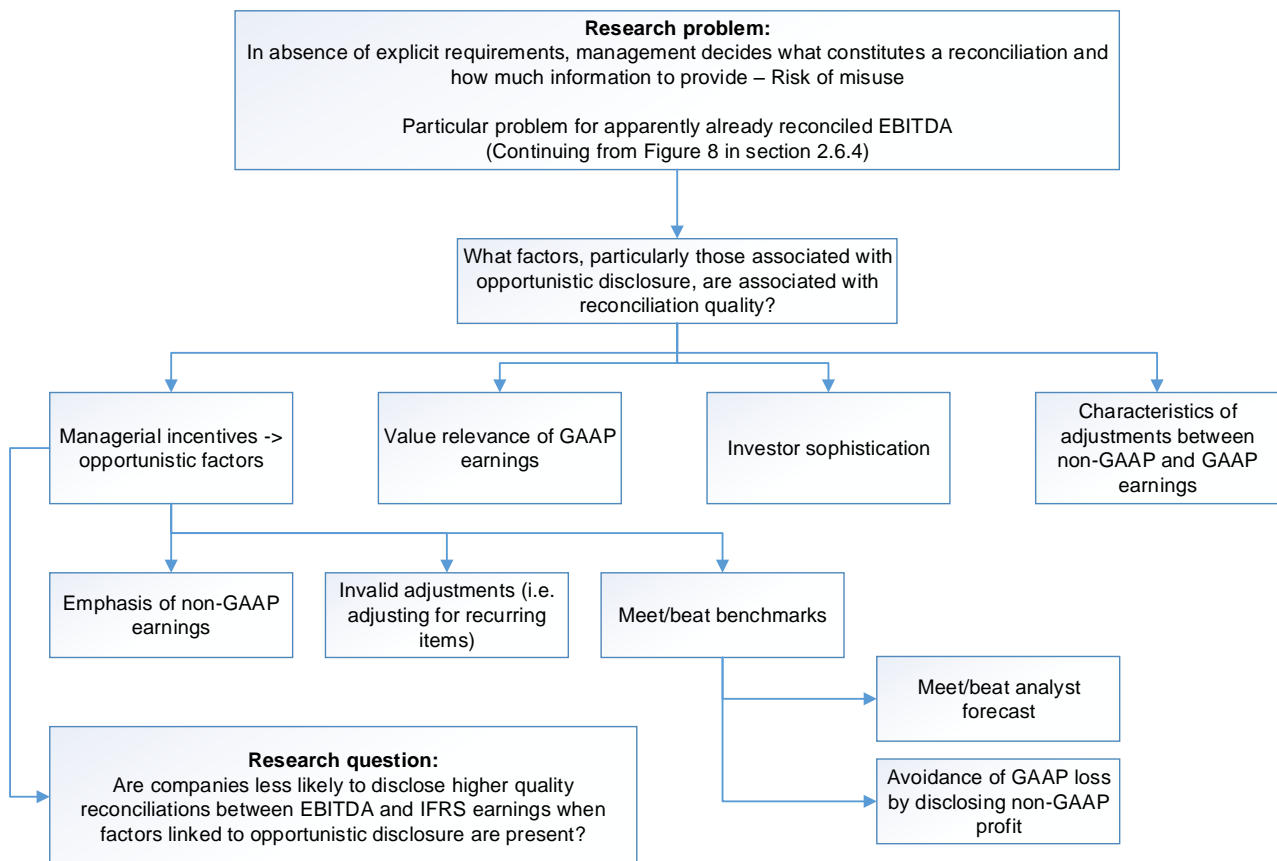
A control variable for size is included in this study as existing literature suggests that company size is positively associated with the level of disclosure in the financial reports. Two reasons for this are proposed. From a political cost perspective larger companies are expected to disclose more detail to prevent a greater regulatory monitoring of their affairs (Watts & Zimmerman, 1990: 139). Larger companies also tend to provide more disclosure because they have already generated the information for internal purposes, thus making it less costly to generate such information (Raffournier, 1995: 262). Consistent with this expectation, Zhang and Zheng (2011: 193) found that company size was both significant and positively associated with reconciliation quality.

2.7.1.6 Conclusion

This section identified factors that are associated with reconciliation quality. These factors include both those factors linked to opportunistic disclosure as well as other factors that may

affect disclosure quality. The section also highlighted the way in which prior studies had categorised adjustments between non-GAAP earnings and GAAP earnings. Figure 9 below continues from Figure 8 in section 2.6.4 by summarising the factors associated with reconciliation quality and, in particular, identifying factors associated with opportunistic disclosure. Figure 9 also relates the research problem to the factors associated with opportunistic disclosure and then to the research question as stated in section 1.3.

Figure 9: Factors associated with reconciliation quality and the link to the research question



Source: Own observation

This section identified the factors affecting reconciliation quality. A summary of the factors identified in the section and which are used in this study's main regression is presented in Chapter 3, section 3.3.4. Furthermore, the adjustment categories identified in this section are used in Chapter 3, section 3.4.1 in categorising the adjustments that companies make between EBITDA and IFRS earnings. The next section concludes the literature review.

2.8 OVERALL CONCLUSION ON THE LITERATURE REVIEW

Chapter 2 commenced by highlighting the accounting theories underlying this study. It was concluded that the earnings management theory and the IASB's Conceptual Framework are applicable in explaining management's decision to provide voluntary disclosure. A discussion on the use of non-GAAP earnings, as an alternative to GAAP earnings, in providing decision-useful information, was provided. The discussion also highlighted the concerns of users and regulatory bodies that management may have incentives to use non-GAAP earnings opportunistically in order to potentially mislead users. In addition, the chapter showed that this concern includes a commonly used non-GAAP earnings measure, namely, EBITDA.

The literature review further highlighted a lack of research on the potential misleading use of EBITDA although evidence does show that EBITDA is calculated inconsistently by companies. The undefined nature of EBITDA may be said to provide management with the opportunity to define EBITDA how they see fit with strategic motives perhaps playing a role.

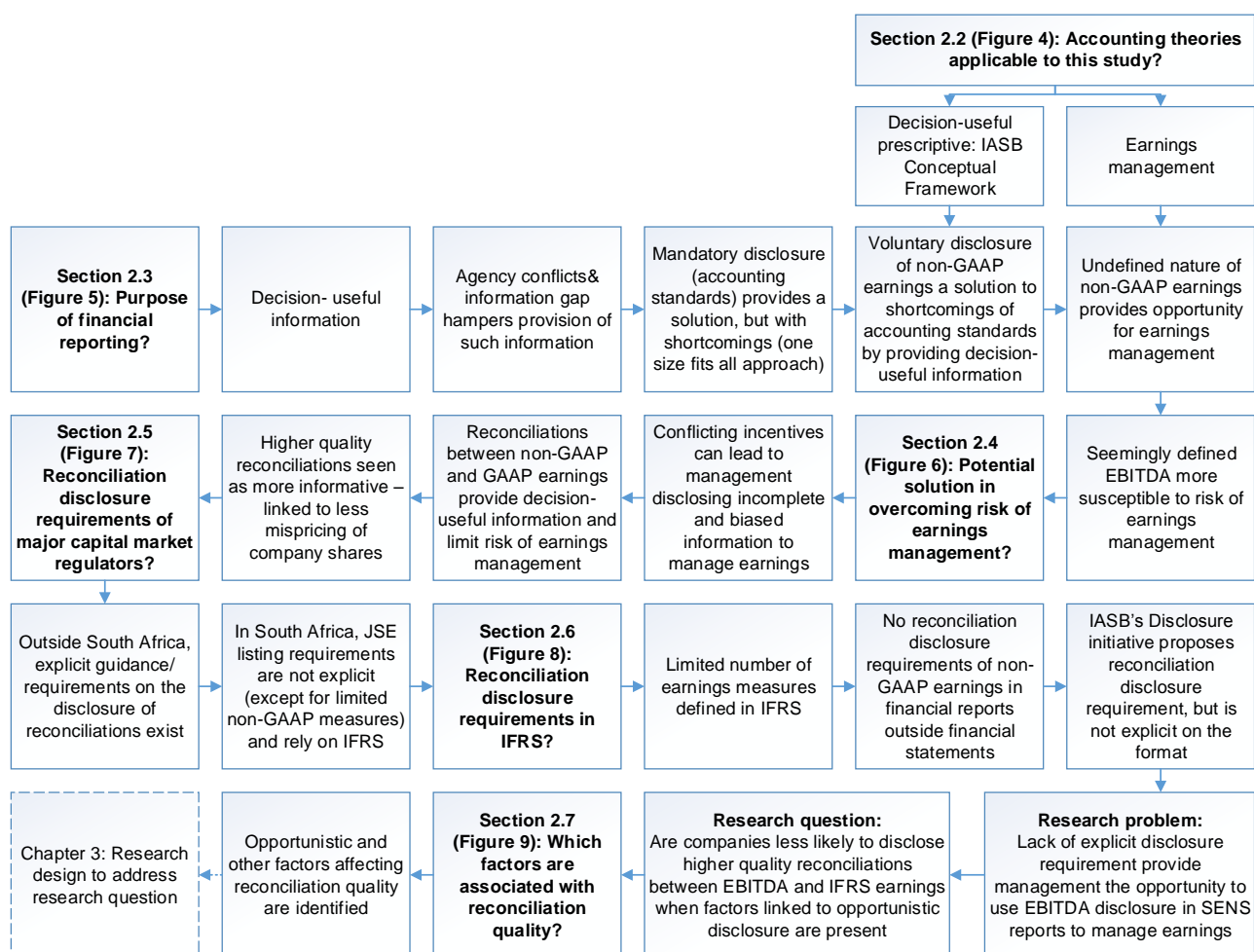
The literature review then revealed that reconciliations between non-GAAP earnings and GAAP earnings play an important role in facilitating decision-useful information, thereby limiting the risk that investors may misprice company shares. Moreover, it was found that

higher quality tabular reconciliations are linked to less mispricing than lower quality narrative reconciliations, thereby supporting the assertion that higher quality reconciliations provide better decision-useful information. In line with this, the chapter also showed that major stock market regulators require or, in some cases, strongly recommend, that companies that disclose non-GAAP earnings should provide tabular reconciliations between non-GAAP earnings and GAAP earnings.

An exception noted was the JSE, which relies heavily on the Conceptual Framework in guiding company financial reports. This exception indicates a possible weakness as the Conceptual Framework does not require reconciling information in a specific format. From an accounting standards setter's perspective, the IASB is considering whether to amend the disclosure requirements to include requirements pertaining to non-GAAP earnings. Whether or not explicit requirements in relation to the format of reconciliations are required, and whether the principles proposed in the Conceptual Framework are sufficient to guide disclosure that facilitate decision-useful information, is open to debate.

Chapter 2 concluded by identifying factors that are expected to influence disclosure decisions made by management, with specific focus on factors associated with opportunistic disclosure and how these factors relate to the quality of the reconciliations between GAAP earnings and non-GAAP earnings. Figure 10 below summarises the findings indicated in Chapter 2 by linking the summarising figures which were presented throughout the chapter.

Figure 10: Summary of literature review



Source: Own observation

The literature review identified the major elements that play a role in this study and positioned both the research problem and the research question. Based on the literature review, the next chapter discusses the research designs deemed necessary to address to research question.

CHAPTER 3: RESEARCH FRAMEWORK, DESIGN AND METHODOLOGY

3.1 INTRODUCTION

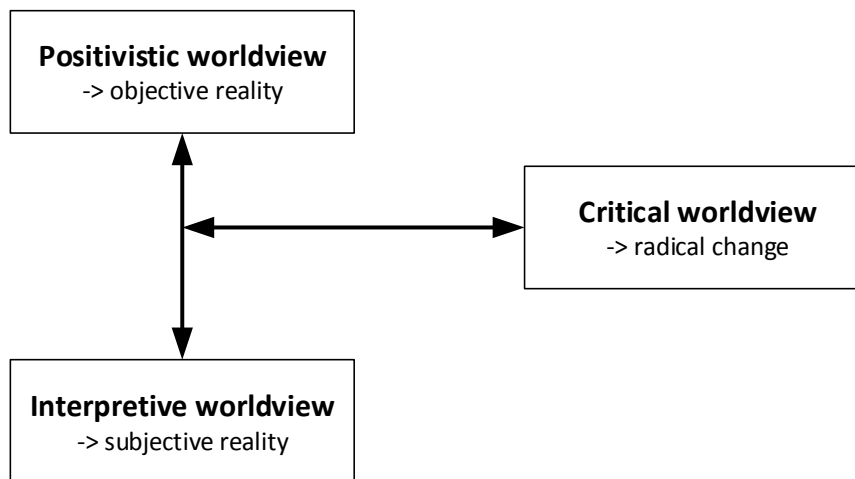
The previous chapter contained a review of existing literature relevant to the research topic. It also identified the research problem and related research question. Chapter 3 describes how the research question will be addressed in the study. It begins by presenting the philosophical view underlying the research. It then discusses the research designs employed to meet the research objectives and discusses the data collection process. Validity concerns pertaining to the research designs and data collection process are also addressed.

3.2 RESEARCH FRAMEWORK

This section positions this study within a worldview of accounting research. Based on the selected worldview, the underlying ontological, epistemological and paradigmatic perspectives are discussed.

3.2.1 Scientific research and the accounting worldview

Research may be defined as a “[s]ystematic investigation or inquiry aimed at contributing to knowledge of a theory, topic, etc., by careful consideration, observation, or study of a subject” (OED Online, 2018a). According to Searcy and Mentzer (2003: 131), research is conducted within the context of a worldview pertaining to a particular discipline, in this case, accounting research. Searcy and Mentzer (2003: 131) define a worldview as the way in which a discipline views the underlying philosophical assumptions about ontology (view of reality) and epistemology (view of the nature of knowledge). Figure 11 below depicts the three worldviews in accounting, together with their related ontological dimensions.

Figure 11: Worldviews in accounting

Source: Searcy and Mentzer (2003: 131) (adapted)

In line with the mainstream view of positivism in accounting research (Bisman, 2010: 4), this study also adopted a positivistic worldview and, therefore, an objective view of reality. From an ontological perspective, this means both that the world is seen as independent from the researcher's subjective consciousness and also that the research undertaken provides an objective view of reality (Searcy & Mentzer, 2003: 134).

In line with the epistemological perspective within the positivistic worldview, it is possible to obtain valid knowledge only through what is observable (Searcy & Mentzer, 2003: 134). Therefore, in furthering knowledge, explanations must be based on the causal laws inferred from empirical relationships (Searcy & Mentzer, 2003: 134).

By applying the abovementioned ontological and epistemological perspectives to this study, the researcher sought to obtain knowledge by collecting company data through the observation of SENS reports and the IRESS database (see section 3.4 on data collection).

The researcher then aimed to explain the empirical relationship between the factors associated with opportunistic disclosure and the reconciliation quality of EBITDA (see Chapter 4).

3.2.2 The research process

As indicated above, this research project was conducted on the basis of a positivistic worldview. In order to make a contribution and add to an existing body of knowledge, Searcy and Mentzer (2003: 131) advise that all of the following components to the research process must be addressed:

- Identify the research problem (section 3.2.2.1)
- Identify the research paradigm (section 3.2.2.2)
- Formulate the theory underlying the research aim (section 3.2.2.3)
- Consider the applicable methodology (section 3.2.2.4)
- Address validity concerns (section 3.2.2.5)

The aspects listed above will now be discussed.

3.2.2.1 Identify the research problem

The research problem, discussed briefly in Chapter 1 (section 1.2), was identified from existing literature and discussed in detail in Chapter 2 (section 2.6). The link between the research problem and the overall research aim, as well as the specific research question flowing from the research aim, was stated in Chapter 1 (section 1.3).

3.2.2.2 Identify the research paradigm

The *Oxford English Dictionary* defines a paradigm as “[a] conceptual or methodological model underlying the theories and practices of a science or discipline at a particular time; (hence) a generally accepted world view” (OED Online, 2018b). This paper follows Searcy and Mentzer’s (2003: 143) narrower definition of a research paradigm as constituting a further partitioning of a worldview.

Within this partitioning, a positivistic worldview is subdivided into the following three paradigms, namely falsificationism, empiricism and realism (Searcy & Mentzer, 2003: 144). The paradigm selected provided the foundation upon which the research project was based and included the accepted ways of looking at the particular worldview, accepted ways of investigating a phenomenon within a worldview, and accepted ways of interpreting the results from the research project (Searcy & Mentzer, 2003: 143).

This study employed the paradigm of empiricism as, in line with this paradigm, empirical evidence is required to test a theory’s ability to depict reality (Searcy & Mentzer, 2003: 143). The methods most commonly used in research based on empiricism include laboratory experiments, simulation, surveys and archival studies. As discussed in section 3.3, this study used archival sources by collecting data from the SENS reports of JSE-listed companies and the IRESS database. The study then tested the theories of earnings management and decision-usefulness by investigating whether the factors linked to opportunistic disclosure are negatively or positively associated with the EBITDA reconciliation quality, thereby providing an objective depiction of reality.

3.2.2.3 Formulate the theory underlying the research aim

A theory may be defined as “a systematically related set of statements, including some law-like generalisations that are empirically testable” (Searcy & Mentzer, 2003: 150). Theories may be grouped into two primary categories, namely, positive (or descriptive) theories and normative (or prescriptive) theories (Searcy & Mentzer, 2003: 150). Both of the underlying theories discussed in Chapter 2, earnings management theory and the decision-usefulness theory (as employed by the IASB’s Conceptual Framework), are accepted in the field of accounting as theories that can explain phenomena (Riahi-Belkaoui, 2012, chap. 2). As a positive theory, the earnings management theory attempts to answer the question of ‘what is’, in contrast to the normative Conceptual Framework that attempts to answer the question ‘what ought to be’. Within the context of the positivistic worldview employed by this study, the ability of both theories to depict reality can be tested within the context of the paradigm of empiricism.

3.2.2.4 Consider the applicable methodology

Mouton and Marais (1994: 15) interprets methodology as the logical process of implementing scientific methods in order to study reality, stating that the ultimate aim in establishing a methodology is to maximise the validity of the research findings. Searcy and Mentzer (2003: 153) subdivide methodology in the following four areas, which are discussed in more detail below:

- The research mode
- The research strategy
- The data domain
- The research technique.

The research mode

The research mode may be either inductive or deductive. According to Searcy and Mentzer (2003: 153) the deductive mode is used when verifying the applicability of a theory through the testing of a specific hypothesis. In contrast, an inductive mode is used when generating theory. In this study a deductive mode was used as a specific hypothesis was tested to verify the applicability of the earnings management theory and the decision-usefulness theory.

The research strategy

The research strategy addresses the nature of the data collected as well as the process used to collect and analyse the data (Searcy & Mentzer, 2003: 153). This study used a combination of a literature review and an archival research design as this strategy was deemed to be the most appropriate to answer the research question within the chosen paradigm of empiricism. The score sheet elements were identified from the literature review and an archival research design was used to obtain empirical evidence of company disclosures made in their SENS reports. The archival approach enabled the researcher to collect sufficient data that could be analysed in order to test the research hypothesis (stated in Chapter 1).

Section 3.3 contains a summary that highlights the research designs used to meet the study's research objectives. The data collection is discussed in section 3.4.

The data domain

After the selection of an archival research strategy, the data domain refers to where the data may be obtained to implement the strategy in question (Searcy & Mentzer, 2003: 153).

Furthermore, based on the originality of the data sources, two main data sources in archival research exist, namely, primary and secondary.

Primary sources refer to original data sources whereas secondary sources refer to data gathered by others. In the context of this study, the SENS reports of companies constitute a primary data source whereas the data obtained from the IRESS database is a secondary data source.

The research technique

The research technique refers to the instrument used to find and analyse the requisite data (Searcy & Mentzer, 2003: 154). The types of data needed were identified in the literature review. Data from the SENS reports of companies were obtained by physically scrutinising the reports and also by using the electronic search term functionality in Acrobat Reader. Company financial data was electronically extracted from the IRESS expert database. Section 3.4 provides a more detailed discussion with specific reference to the research techniques used to collect the data. The data analysis methods are discussed in section 3.3 and applied in Chapter 4.

3.2.2.5 Address validity concerns

The selection of a particular methodology (based on the four areas discussed above) is guided by the paradigm chosen and the underlying theory that the researcher is attempting to verify (Searcy & Mentzer, 2003: 154). As stated earlier, in answering the research question a methodology that maximises the validity of the research findings should be chosen. Validity may be defined as the extent to which the research achieves what it set out

to achieve (Smith, 2015: 40). Validity concerns are addressed in section 3.3.5 after the detailed discussion of the research designs used to meet the research objectives.

3.3 RESEARCH DESIGN

The previous section discussed the research framework underlying this study. This section discusses the research designs followed to meet the various research objectives, which were set out in Chapter 1 (section 1.5). The discussion on the research designs below incorporates the research strategy, the research domain and the research techniques discussed in the previous section. Following the discussion on the research designs, the validity concerns raised at the end of the previous section are discussed in detail.

Table 4 below depicts the research designs that were used to meet the relevant research objectives, the data sources, and the sections where the findings in respect of the research objectives are presented. Each objective and related designs are subsequently discussed in more detail.

Table 4: The relationship between the research objectives and research designs

Research objectives	Research design	Source of data	Findings
i) To describe the nature of EBITDA reporting.	Archival design.	SENS reports from IRESS Expert database.	Section 4.2
ii) To assess EBITDA reconciliation quality.	Literature study.	Literature on voluntary disclosure.	Section 2.4
	Archival design.	SENS reports obtained in (i) above.	Section 4.3
iii) To identify factors linked to opportunistic disclosure.	Literature study.	Literature on voluntary disclosure.	Section 2.7
	Archival design.	SENS reports obtained in (i) above Company financial data from IRESS Expert database.	Section 4.4
iv) To determine whether EBITDA reconciliation quality is negatively associated with factors linked to opportunistic disclosure.	Ordinary-least-squares multiple regression.	The above data analysed using statistical software.	Section 4.4

Source: Own observation

3.3.1 Research design to meet the first research objective

The first research objective of this study was to describe the nature of EBITDA (Earnings before interest, tax, depreciation and amortisation) disclosure in the SENS reports of JSE-listed companies. An archival research design was therefore used to establish whether any diversity exists between the EBITDA disclosures in the SENS reports of JSE-listed companies and, if so, to describe the nature of the adjustments that companies make in deriving EBITDA. This was done to identify all instances where companies reported EBITDA in their annual results as disclosed in SENS. Descriptive evidence was then obtained to determine whether companies use EBITDA as a standardised measure, how EBITDA is defined, and the nature and number of the adjustments between IFRS earnings and EBITDA. The aim of this process was to identify the adjustments, other than interest, tax, depreciation and amortisation, companies make in order to derive EBITDA. Furthermore, the data should reveal the extent to which companies are consistent in the way in which they

define EBITDA. Finally, how companies defined EBITDA was also used when allocating a reconciliation score in the attempt to realise the second research objective. It emerged from the literature that the IASB and users of financial statement are concerned that EBITDA is not calculated on a consistent basis. The data should also identify whether companies adjust for legal expenses and share-based costs. Legal expenses and share-based costs are seen as invalid adjustments and can be an indication of opportunistic disclosure (Howard, 2016: 22). The latter finding in respect of research objective one was also used to realise the fourth research objective when performing the regression analysis. In order to realise the second research objective the selected SENS reports were used to measure the quality of the EBITDA reconciliation disclosed.

3.3.2 Research design to meet the second research objective

The second research objective was to assess the quality of the reconciliations between EBITDA and IFRS earnings, as disclosed in the SENS report. The literature review was first used to explore how prior studies had assessed reconciliation quality (see Chapter 2, section 2.4). Based on the results, an ordinal scale of EBITDA reconciliation quality was compiled using the scale employed by Zhang and Zheng (2011: 188). As stated in section 2.4.1 on the literature review, the scale used by Aubert and Grudnitski (2014: 157) is not able to distinguish between instances where the reconciliation is provided using narrative explanations and where the reconciliation is provided in tabular format that depicts both the nature and amount of the adjustments. Accordingly, the scale used by Zhang and Zheng (2011: 188) was deemed to be the most appropriate for the purposes of this study and was adapted for use in this study. However, since Zhang and Zheng (2011: 188) investigate the reconciliation quality of non-GAAP measures in general, the specific nature of EBITDA also had to be taken into account.

Superficially, EBITDA already represents a defined measure enabling a reconciliation between EBITDA and IFRS earnings (Hitz, 2010: 74). By disclosing the acronym EBITDA, this already implies the items which are adjusted for. Prior research supports the notion that EBITDA is a standardised earnings measure (Black & Christensen, 2009; Dichev, Graham, Harvey & Rajgopal, 2013). However, as alluded to earlier, there is a concern that the adjustments made by companies to calculate EBITDA are not consistent between companies (IASB, 2017a, para. 5.11d). Consequently, a narrative disclosure of the nature of the adjustments is distinguished from instances in which the acronym only is disclosed. The scale used in this study is presented in Table 5 below.

Table 5: Score sheet used in this study to measure reconciliation quality

Type of reconciliation	Score (from lowest to highest quality)
EBITDA mentioned as an acronym, but no narrative disclosure of the nature of the adjustments	1
Narrative disclosure of the nature but not the amounts of the adjustments	2
Narrative disclosure of both the nature and amounts of the adjustments	3
Disclosure of a quantitative tabular reconciliation between EBITDA and IFRS earnings, or disclosure of EBITDA as a line item in statement of comprehensive income	4

Source: Adapted from Zhang and Zheng (2011: 188)

In cases where a company reports the acronym EBITDA as a line item in its SCI, a score of four is awarded if the amount is clearly reconciled to IFRS earnings. This is in line with IAS 1 that allows companies to include non-defined IFRS subtotals in their SCIs as long as the amount is comprised of amounts recognised in terms of IFRS standards (IASB, 2017d, para. 85A). On the other hand, where EBITDA is included as a line item on the SCI, but no clear link to IFRS earnings is made, a score of one is awarded.

In order to realise the research objective and assess the EBITDA reconciliation quality in the SENS reports, the second research design used was an archival design. This design enabled the SENS reports to be scrutinised and the appropriate reconciliation score in terms of the ordinal scale established above was allocated. The results were then described in terms of the industry dispersion and market capitalisation of the companies to determine whether it was necessary to control for these factors in the main regression used to realise objective four. This was done because existing literature show that companies in specific industries are more likely to disclose non-GAAP earnings than companies in other industries. Also, it is expected that larger companies will provide more detailed disclosure in the form of higher quality reconciliations. These two factors, namely, industry membership and size, are discussed in more detail in section 3.3.3. The reconciliation score is also required to perform the regression for realising the fourth research objective. Using the JSE industry data per company (JSE, 2018) and the market capitalisation data from IRESS, the concentration of EBITDA reconciliation quality was described on the bases of both industry and company size.

3.3.3 Research design to meet the third research objective

The third research objective was to identify the factors that are linked to opportunistic disclosure as well as factors that may influence managers' disclosure decisions. Firstly, a literature review was used to identify the relevant factors. This step was exploratory in nature and the findings are included in Chapter 2, section 2.7. The relatively small number of companies included in this study (see section 3.4) limits the number of independent variables that can be included in the main regression. The main reason for this is the statistical inference problems that arise due to the multicollinearity induced by including too many independent variables in relation to the number of observations (see section 3.3.5 for a discussion on validity concerns). Accordingly, only factors that were mentioned in the

literature review (section 2.7) that were found to have a statistically significant impact on reconciliation quality and for which sufficient data could be obtained were included in this study.

Based on the findings in the literature review, the factors included in this study are summarised in Tables 6 and 7 below. Both Tables 6 and 7 also include the specific measurement of the proxy, reference to existing literature, and the expected sign of association in relation to the reconciliation quality, if known. Where the term 'IFRS earnings' is used in Tables 6 and 7, it refers to any measure of IFRS earnings defined in section 2.6.1. On the other hand, the term 'IFRS profit/loss' refers to the net profit/loss for the year. Table 6 below summarises the factors linked to opportunistic disclosure.

Table 6: Factors associated with opportunistic disclosure

Factors associated with opportunistic disclosure	Measurement	Relevant section in literature review	Expected sign of association
Emphasis on non-GAAP earnings.	Indicator variable equals 1 if EBITDA mentioned before any measure of IFRS earnings in the SENS report, and 0 otherwise.	Section 2.7.1.2	Negative
Avoid losses.	Indicator variable equals 1 if EBITDA is greater than zero and IFRS profit/loss is less than zero, and 0 otherwise.	Section 2.7.1.2	Negative
Invalid adjustments (defined as adjustments for share-based payments and legal expenses).	Indicator variable equals 1 if company adjusts IFRS profit/loss for share-based payments or legal expenses in calculating EBITDA, and 0 otherwise.	Section 2.7.1.4	Negative

Source: Own observation

Of the two factors relating to the strategic benchmark meeting or beating, namely, avoidance of losses and meeting or beating analysts' forecasts (section 2.7.1.2), avoidance of losses only is included in Table 6 above. The other factor, whether or not the IFRS earnings of companies met analysts' forecasts, is excluded from Table 6 due to the unavailability of analyst forecast data for all the companies in the population. This limitation on the availability of analyst forecast data for South African companies was also noted by Howard (2016: 86) in his study on the non-GAAP disclosure of South African companies.

In addition to the factors associated with opportunistic disclosure, and included in Table 6 above, there are other factors that can also affect reconciliation quality. Table 7 below lists the other variables identified from the literature review that are also expected to affect management's reconciliation decision.

Table 7: Other factors that may influence reconciliation quality

Other factors that may influence reconciliation quality	Measurement	Relevant section in literature review	Expected sign of association
Current losses.	Indicator variable equals 1 if IFRS profit/loss is a loss, and 0 otherwise.	Section 2.7.1.1	Positive
Industry membership.	Indicator variable of one or zero to distinguish between industry membership of companies.	See this section for discussion	Unknown
Company size.	Natural log of a company's market capitalisation at year-end.	Section 2.7.1.5	Positive
Adjustments made between EBITDA and IFRS profit.	Indicator variable equals 1 if a SENS report made adjustments other than interest, tax, depreciation and amortisation when deriving at EBITDA, and 0 otherwise.	Section 2.7.1.4	Positive

Source: Own observation

Although Zhang and Zheng (2011) found earnings variability to be a statistically significant factor in explaining reconciliation quality, the population in this study would have been drastically reduced as a result of a lack of earnings information on all companies prior to 2014. The earnings information prior to 2014 is necessary to calculate earnings variability. Therefore, the variable measuring earnings variability is not included in this study.

Zhang and Zheng (2011: 189) included a dummy variable to control for industry membership in the technology sector because of the prevalence of non-GAAP reporting by US-based high-technology companies. When comparing the findings to those of Howard (2016: 60), the concentration of non-GAAP reporting by South African companies in the technology sector is significantly less than that of Zhang and Zheng's (2011) US-based sample. In Howard's study (2016: 60) of 191 company-years (56 companies) for the period 2010 to 2014, the technology industry did not feature in the top five industries (that made up 82.5% of the total number of companies that report non-GAAP earnings). In contrast, Zhang and Zheng (2011: 192) found 59.1% of their sample to be concentrated in the high-technology sector. As will be seen in section 4.2, the technology industry represents 9.1% only of the population in this study. In addition, it is worth noting that a major reason for companies to disclose non-GAAP earnings measures is to overcome the shortcoming of standardised IFRS earnings that ignore company and industry differences. Consequently, in this study the dummy variable for industry membership of the technology industry was not included. Instead, to control for the effect that industry membership has on the EBITDA disclosure decision of companies, dummy variables that control for the effect of industry membership in all industries were included.

Whereas Zhang and Zheng (2011: 189) included the number of adjustments between the non-GAAP and GAAP earnings as an independent variable, this study used a binary

distinction of whether a company made adjustments other than for interest, tax, depreciation and amortisation (ITDA) when calculating EBITDA. The binary variable takes on the value of one if a company made adjustments other than ITDA and zero otherwise. During the data collection process (see the discussion in section 3.4.1.1) it became apparent that some companies disclosed adjustments in an 'other adjustments' category. Therefore, if two companies made the same number of adjustments but the one company disclosed the detail comprising 'other adjustments', this company was seen as making more adjustments than another company that disclosed the adjustment only as 'other'. This introduces measurement error in determining the number of adjustments which would lead to biased coefficients (Wooldridge, 2014: 260). However, the use of a binary variable representing instances where companies made adjustments other than ITDA solved the measurement problem.

Lastly, an archival design was used to gather the supporting data from the SENS reports and the IRESS Expert database. The measurements depicted in Tables 6 and 7 above were then applied to this data. The data collected is discussed in more detail in section 3.4.

3.3.4 Research design to meet the fourth research objective

The fourth and final objective was to determine whether companies are more likely to disclose higher quality reconciliations between EBITDA and IFRS earnings when factors linked to opportunistic disclosure are present. Factors associated with opportunistic disclosure, as well as other control variables that could influence reconciliation quality, were identified in the previous section and are included in the main specification below.

The main regression specification used to address research objective four is as follows:

$$RECONSCORE_{it} = \beta_0 + \beta_1 EMPHASIS_{it} + \beta_2 AVOID_LOSS_{it} + \beta_3 INVALID_ADJ_{it} + \beta_4 CY_LOSS_{it} + \beta_5 INDUSTRY_DUMMY_{it} + \beta_6 SIZE_{it} + \beta_7 ADJUST_{it} + \varepsilon$$

RECONSCORE is the reconciliation quality score ranging from one to four. The scoring scale was discussed in section 3.3.2. β_0 represents the intercept and ε represents the classical error term. All other independent variables, together with how they were measured, are discussed in Table 8 below. This is followed by a discussion of the estimation method used in applying the regression analysis. The subscript '*it*' refers to the observation pertaining to company *i* in period *t*.

Table 8: Independent variables used in the main regression

Variables	Measurement
Variables that proxy for opportunistic disclosure:	
<i>EMPHASIS</i>	1 if EBITDA is mentioned before IFRS earnings in the SENS report, and 0 otherwise.
<i>AVOID_LOSS</i>	1 if EBITDA is greater than zero and IFRS profit/loss is less than zero, and 0 otherwise.
<i>INVALID_ADJ</i>	1 if company adjusts for an invalid adjustment in calculating EBITDA, and 0 otherwise.
Other variables:	
<i>CY_LOSS</i>	1 if IFRS profit/loss is a loss, and 0 otherwise.
<i>INDUSTRY_DUMMY</i>	Dummy variable to control for industry membership.
<i>SIZE</i>	Natural log of market capitalisation at end of the year.
<i>ADJUST</i>	1 if a SENS report made adjustments other than for interest, tax, depreciation and amortisation when deriving at EBITDA, and 0 otherwise.

Source: Own observation

In line with Zhang and Zheng (2011: 193) and Aubert and Grudnitski (2014: 165), an ordinary least squares estimation method (OLS) was used to estimate the coefficients in the main regression model indicated above. The use of OLS assumes that the dependent variable is continuous; that is, it can range from negative infinity to positive infinity (Williams, 2018). However, as in the cases of Zhang and Zheng (2011: 193) and Aubert and Grudnitski (2014: 165), the dependent variable in this study is categorical and may take on limited values only. Nevertheless, OLS can still be used to provide valid approximations of the effect of the independent variables on the dependent variable, especially if the dependent variable is multinomial as is the case in this study (Wooldridge, 2014: 211).

The overall validity of the model was assessed by performing an F-test for the analysis of variance (ANOVA). A significant F-statistic means that, when assessed together, at least one of the coefficients on the independent variables is significantly different from zero. This signifies the validity of the model.

When interpreting the coefficients from OLS estimation, a negative coefficient means that a unit increase in an independent variable is associated with a decrease in the reconciliation score. Conversely, a positive coefficient means that a unit increase in an independent variable is associated with an increase in the reconciliation score. The main focus in this study is on the sign of the coefficients on the factors relating to opportunistic disclosure; β_1 EMPHASIS, β_2 AVOID_LOSS and β_3 INVALID_ADJ. A negative coefficient on these variables can also be interpreted as suggesting that a company is less likely to provide higher quality reconciling information when an opportunistic factor is present. Accordingly, a negative coefficient provided support for the hypothesis as stated in Chapter 1 (section 1.4).

3.3.5 Validity concerns

Smith (2015: 41) identifies the following types of validity concerns that should be addressed in a research project:

- Construct validity – the extent to which a construct or variable accurately measures the concept it is intended to measure.
- Internal validity – the ability to control the variables in the problem environment in order to be able to assert that a causal relationship exists between the explanatory variables and the explained variable.
- External validity – the extent to which the findings may be applied to other situations in a similar context.

When assessing internal validity, two additional aspects that should also be considered include the reliability of the data collection process and the validity of the inferences made from the empirical findings (Mouton & Marais, 1994: 51). Validity concerns about the reliability of the data collection process are discussed in the following section on the data collection. The other validity concerns are discussed below.

Construct validity

The risk that the variables in the main regression do not accurately capture the concepts they were intended to capture may be mitigated by using variables identified from the international study conducted by Zhang and Zheng (2011), which was published in a highly rated accounting journal, the *Journal of Accounting and Economics* (SJR, 2018).

Internal validity

In contrast to experimental research, a researcher using an archival approach lacks direct control over the variables examined. This can lead to lower internal validity, which makes it difficult to assert that a causal relationship exists between the explained and the explanatory variables. Therefore, the majority of archival studies in accounting, instead of attempting to establish the causal effect, investigate the association (or direction thereof) between the dependent and the independent variables (Smith, 2015: 146). This is also the case in this study where an attempt was made to determine whether the opportunistic factors are positively or negatively associated with the reconciliation quality. Furthermore, by basing the main regression specification on that used in the international study conducted by Zhang and Zheng (2011), internal validity was enhanced.

Statistical inference validity

During the data collection process (section 3.4.1.1) it was determined that 60 companies, out of a total 86 companies, feature in each of the three years under review. In view of the fact that it is likely that companies' disclosure practice would not vary significantly between years, this raised the concern that the company-specific disclosure practices are not independent over the three-year period under review. Consequently, the error term in the OLS regression would be serially correlated across the three-year period, which if not controlled for, may lead to invalid statistical inferences. As will be reported in section 4.4.3, serial correlation is present in the data. In order to address the issue of serial correlation, an alternative OLS model that is robust to the effect of serial correlation, was derived from the main regression model. The robust model is discussed below.

The robust model was derived from the main regression model by using the average values of all variables across the three-year period. The average reconciliation score per company was then regressed on the average values of the independent variables. By using average values per company across the three-year period, the population was reduced from company-year observations to company observations. By performing the regression on a company basis, rather than on a company-year basis as in the main regression, the unobservable company-specific effects that are fixed throughout the three-year period was removed. However, a disadvantage of this method is that the averaging leads to a loss of information due to the loss of company-year information. This could have an effect on the magnitude of the coefficient estimates although the coefficient sign would still be unbiased. Since the main focus of this study was on the association between the reconciliation score and factors associated with opportunistic disclosure, the sign of the coefficients, rather than the magnitudes of the coefficients, was of interest. The averaging model is as follows:

$$AVE_SCORE_i = \beta_0 + \beta_1 AVE_EMPHASIS_i + \beta_2 AVE_AVOID_LOSS_i + \beta_3 AVE_INVALID_ADJ_i + \beta_4 AVE_CY_LOSS_i + \beta_5 INDUSTRY_DUMMY_i + \beta_6 AVE_SIZE_i + \beta_7 AVE_ADJ_NUM_i + \varepsilon$$

AVE_SCORE is the average of *RECONSCORE* as defined in Table 8 above. All other variables, except for the industry dummies, are the average values of variables already explained in Table 8 above. The predicted signs of the coefficients remain unchanged. The subscript *i* denotes the company for which the average is calculated.

In order to enhance statistical inference validity, a qualified and experienced statistician determined the appropriateness of the regression models and performed the regressions.

External validity

Based on its empirical stance, an archival research approach will usually lead to a greater level of generalisation, although a flawed selection process may undermine the study's external validity (Smith, 2015: 146). This study focused on the EBITDA reconciliation quality, as disclosed in the SENS reports containing the annual results of JSE-listed companies in South Africa. External validity was thereby increased, as the population included all companies that reported EBITDA as a measure of earnings. In order to ensure that the results of the main regression are not driven by industry participation or the size of the companies, the main regression was also performed by including industry and size controls (see section 3.3.3 for a discussion).

3.4 DATA COLLECTION

This section describes the population and the way in which the requisite data was collected. The discussion on the data collection pertaining to research objectives one and two is combined as the primary data source is the same SENS report. Validity concerns pertaining to the data collection process are also addressed.

3.4.1 Research objectives one and two

The first research objective was to describe the nature of EBITDA reporting in the SENS reports issued by JSE-listed companies. The second objective was to assess the reconciliation quality of the reported EBITDA measures.

Mouton (2001: 51) describes the unit of analysis in a study as the object that is investigated. The units of analysis in this study were the SENS reports of JSE-listed companies in which

they report their annual financial results. In view of the fact that the aim of this study was to investigate the association between factors linked to opportunistic disclosure and the quality of the EBITDA disclosure, the focus of the study was on companies that disclosed EBITDA as a performance measure in their SENS reports. The period covered by the study include the SENS reports with annual results of JSE-listed companies for the three financial years that ended in 2014 to 2016. The unit of analysis was on a company-year basis with the result that all data was treated as cross-sectional and the number of observations that can be analysed was increased. Validity issues pertaining to the non-independence of observations were discussed in section 3.3.5. The period in question was selected, firstly, to provide sufficient data points to perform the regression necessary to realise research objective four and, secondly, to provide timely evidence that could be of value to the JSE and the IASB.

3.4.1.1 Population and data collection

The population in this study consisted of JSE-listed companies that disclosed EBITDA as a performance measure in their SENS reports for the financial years ending in 2014 to 2016. By including all the companies that disclosed EBITDA as a performance measure, sampling selection problems were eliminated. Table 9 below depicts how the population was determined.

Table 9: Composition of the population used in the study

	Companies	Company-years (=SENS reports)
Initial identification of JSE-listed companies on IRESS database:		
Total number of JSE-listed equities on the IRESS database in September 2017.	440	
less: Number of companies with more than one type of issued equity (thereby removing duplicate selections).	(66)	
less: Number of companies for which no SENS report for any of the years 2014 to 2016 was available.	(45)	
Remaining number of companies whose SENS reports for the period 2014 to 2016 were searched for the disclosure of EBITDA.	329	
Determining the population:		
Identification of SENS reports in which the 329 companies identified above disclosed EBITDA.		
SENS reports in which EBITDA was disclosed for any of the financial years ending in 2014, 2015 and 2016.	125	307
less: SENS reports in which EBITDA was not disclosed as a performance measure.	(39)	(87)
Final population	86	220

Source: Own observation

The starting point in identifying the population was to obtain a list of all the JSE-listed equities on the IRESS database. The total number of listed equities at the date of the data extraction in September 2017 was 440. Sixty-six companies had more than one type of listed equity (e.g. preference and ordinary shares) and these duplicate company selections were removed. No SENS reports for 45 companies for any of the three years could be obtained on the IRESS database. Since the date of the data extraction was in September 2017 companies that had listed after the selection period were included in the initial list of 440 companies. For example, Premier Food and Fishing Limited was part of the initial selection of companies but had been listed on 2 March 2017 only (JSE, 2017b). The SENS reports containing the annual results of the remaining 329 companies for the financial years ended in 2014 to 2016 were then downloaded in Portable Document Format (PDF).

The next step involved identifying those SENS reports in which EBITDA was disclosed, whether as a performance measure or as part of other disclosures. For example, some companies disclosed EBITDA as part of their fair value measurement disclosure or as part of their debt covenant disclosure, and not as a measure of company performance. As discussed later, the SENS reports selected during this step were then used to identify the SENS reports in which EBITDA was disclosed as a performance measure – the focus of this study. In order to identify the companies that reported EBITDA in their SENS reports, the SENS reports of all the companies for the selected period were downloaded in PDF format from the IRESS database. Following the example of Malone, Tarca and Wee (2016: 66), the functionality in Adobe Acrobat was used to search across the PDFs for the search term 'EBITDA'. Not using wider search terms, for example an 'earnings before'-variant, could have resulted in the exclusion of SENS reports that do not use the acronym 'EBITDA' but, instead, use a narrative depiction, namely, 'earnings before interest, tax, depreciation and amortisation'. However, literature indicates that companies commonly use the acronym 'EBITDA' when referring to 'earnings before interest, tax, depreciation and amortisation'. Furthermore, by using the acronym 'EBITDA' only, subjectivity in the use of other search terms was reduced. As can be seen from the descriptive results reported later in section 4.2.1 (Table 12), the narrative definitions of EBITDA vary widely between companies. A total of 307 SENS reports, relating to 125 companies, disclosed EBITDA.

Based on the selection discussed above, the next step involved identifying the SENS reports in which EBITDA was presented as a performance measure, in addition to the companies' IFRS earnings. The selected SENS reports were scrutinised, firstly, to identify the SENS reports in which EBITDA was disclosed as performance measure and, secondly, to obtain the relevant data necessary to address the research objectives. As a check of completeness, and to ensure that all instances where EBITDA were mentioned in the SENS

were considered, the search terms 'EBIT' and 'earnings before' were used. If these terms yielded no results, the term 'before' was also used as a final check of completeness as section 4.2.1 (Table 12) shows that companies also define EBITDA as 'profit/loss before...', and not necessarily as 'earnings before...'.

In identifying the SENS reports that disclosed EBITDA as a performance measure and in order to obtain information relevant to addressing the research objectives, the following data per company was obtained from the SENS reports:

- Company name and unique JSE identifier
- Financial year end
- EBITDA reference
- Emphasis score
- EBITDA definition
- EBITDA disclosure score
- The amount of a company's EBITDA measure
- Reconciling items (both the nature and amounts)

The EBITDA reference is linked to the way in which a particular SENS report referred to EBITDA, for example EBITDA, 'normalised EBITDA', and 'EBITDA excluding special items'. This distinction, together with the types of adjustments made, are deemed to be important in addressing the first research objective in relation to understanding how companies report EBITDA, whether there is diversity between South African companies, and whether companies see EBITDA as a standardised measure. Instances where SENS reports did not disclose EBITDA as a specific performance measure were documented as 'No EBITDA

reporting' and then excluded from the population. The reason for this decision is because the focus of the study is on the use of EBITDA as a measure of company performance.

Examples of observations where EBITDA is disclosed, but not used as a measure of the consolidated entity's performance, include the following:

- The only mention of EBITDA is as part of a company's debt covenants (e.g. Distribution and Warehousing Limited 2016 SENS report (Distribution and Warehousing Limited, 2016)).
- EBITDA is reported as an input used in valuations or fair value measurement only (e.g. Investec Plc 2016 SENS report (Investec Plc, 2016)).
- EBITDA is reported in the note on reportable segments only (e.g. Grand Parade Investment Limited 2016 SENS report (Grand Parade Investment Limited, 2016)).

The reason for excluding instances where EBITDA was reported in the segment report only is because IFRS 8 *Operating Segments* (IASB, 2017h, para. 23) allows companies to disclose non-GAAP measures in the segment note, whereas the primary focus in this study is where companies report EBITDA as a measure of the overall performance of the consolidated entity. Of the initial population of 307, 87 company-year observations where EBITDA was disclosed in a SENS report, but not as a measure of performance, were excluded. After excluding the 87 company-year observations, the final population of 220 company-year observations, relating to 86 companies, remained.

An emphasis score that is used in the main regression (see section 4.4) was then determined. A score of one was awarded if a company mentioned an EBITDA measure before an IFRS measure of earnings, and zero otherwise. Recall that section 2.6.1 defined

IFRS earnings. As stated previously, the focus of this study is on EBITDA as a summary performance measure. Where a company disclosed EBITDA as a financial statements ratio, the occurrence was not considered as EBITDA disclosure. For example, AngloGold Ashanti Limited's 2016 SENS report discloses 'net debt to adjusted EBITDA ratio' before it discloses a measure of IFRS earnings and, hence, the allocation of an emphasis score of zero (AngloGold Ashanti Limited, 2017).

The next step involved determining whether, and if so, how a company defined its measure of EBITDA. In instances where no reconciliation between a company's EBITDA measure and IFRS earnings was provided, this definition of its measure of EBITDA explains how a company measured EBITDA (i.e. it provides a narrative of how the EBITDA relate to IFRS earnings). Where no definition was provided, or the amount was not included as a line item in either the SCI or tabular reconciliation, it was assumed that the company defined EBITDA as IFRS earnings from continuing operations before interest, taxation, depreciation and amortisation. Interest, taxation, depreciation and amortisation refer to those amounts disclosed in the SCI and notes to the SCI in the SENS report.

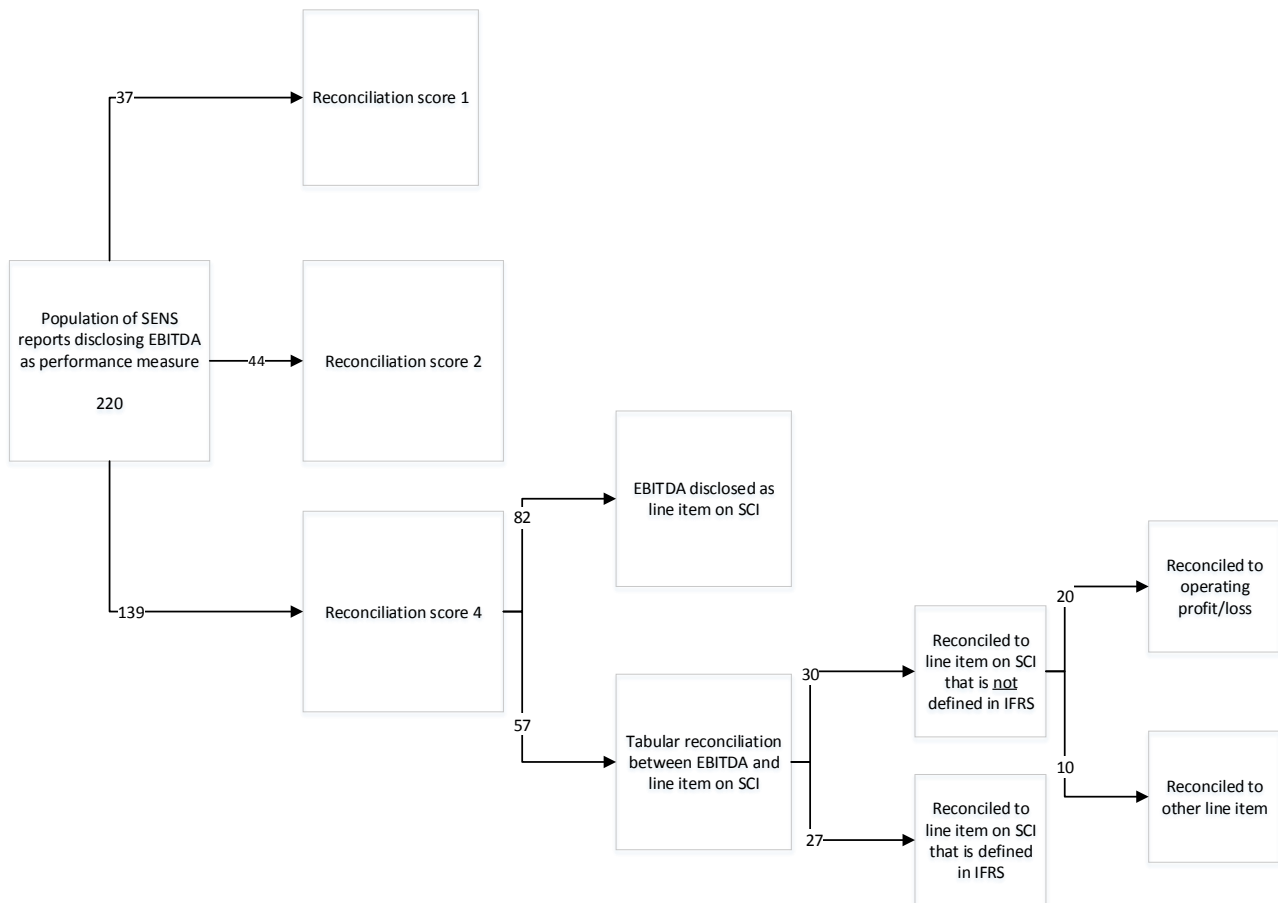
The EBITDA reconciliation score was awarded according to the score sheet previously presented in section 3.3.2 (Table 5). Descriptive statistics showed there were no occurrences where a score of three was awarded; i.e. where a company provided the nature and amounts of adjustments only, but not in tabular format. Where a company reported the acronym EBITDA as a line item in its SCI, a score of four was awarded, but only if the amount clearly reconciled to the IFRS earnings as defined in section 2.6.1. For example, Ansys Limited's 2016 SENS report (Ansys Limited, 2016) includes EBITDA as a line item in the SCI, which clearly reconciles to IFRS earnings. In contrast, in the 2015 SENS report of ADvTECH Limited (ADvTECH Limited, 2016), EBITDA is included as a line item on the SCI,

followed by the operating profit line item, but no indication of how the two amounts (and, thus, EBITDA and IFRS earnings) reconcile. Unless a tabular reconciliation was provided, explaining the difference, such an occurrence scored only a one.

The last step involved identifying the types of adjustments between a company's EBITDA measure and its IFRS earnings. This step is deemed necessary to determine the number of adjustments between EBITDA and IFRS profit/loss, which will be used in the main regression when realising objective four. A problem encountered during this step was that several companies that provided a tabular reconciliation did not reconcile their measures of EBITDA directly to an IFRS earnings measure but, rather, to operating profit. Initial descriptive statistics (see figure 12 below) show that 30 of the 57 companies that provided a reconciliation in tabular format (and thus scored a four) reconciled their EBITDA measure to a line item in the SCI that is not a defined IFRS earnings measure with 20 of the abovementioned 30 companies reconciling EBITDA to operating profit. Although a reconciliation to IFRS earnings is still possible when inspecting the SCI to determine how the amount reconciles to IFRS earnings, the earnings measure to which EBITDA is reconciled will, necessarily, affect the types of adjustments identified. In order to ensure that the process whereby the types of adjustments were identified was consistent for all SENS reports, adjustments included all items that reconciled a measure of EBITDA to the IFRS net profit/loss for the year. Where a score of one was awarded, it was presumed that the reconciling amount was IFRS profit/loss for the year. Figure 12 below provides an overview of the reconciliation scores awarded as well as a further breakdown between the two types of instances where a score of four was awarded, namely, where EBITDA appeared as a line item on the SCI and where a tabular reconciliation was provided. The first instance refers to EBITDA being disclosed as a line item on the SCI and the second to the provision of a tabular reconciliation between EBITDA and a line item included in the SCI. As further

discussed in section 4.3, there were no SENS reports for which a reconciliation score of three was awarded.

Figure 12: Overview of reconciliation scores awarded and further breakdown of score four instances (N = 220)



Source: Own observation

Where a company provided no tabular reconciliation nor did it include the EBITDA measure in its SCI (i.e. where a disclosure score of less than four was awarded), the researcher of this study performed a reconciliation based on the narrative description of how the EBITDA was compiled. Where the EBITDA acronym only was reported, it was assumed that companies adjusted for interest, tax, depreciation and amortisation only. In such instances

the interest and tax from the SCI was used, and the depreciation and amortisation obtained from elsewhere in the SENS report, if disclosed. All instances where, based on the narratives in the report, the researcher was unable to reconcile the reported EBITDA measure to IFRS earnings, were documented.

Initially, all individual types of adjustments, as reported by a company, were documented separately. Where companies disclosed more than one type of adjustments collectively (for example, Glencore Plc's 2016 SENS report (Glencore Plc, 2017) included 'other expenses' as a reconciling item), the SENS report was scrutinised to determine a further breakdown of the amount elsewhere in the report. Where a further breakdown was identified, the amounts were reallocated to a specific adjustment type. If this was not possible, the adjustment remained as initially reported on by the company, for example, as 'other expenses'.

In order to facilitate a comparison between the findings in this study, and the adjustments identified in prior studies (see section 2.4), the individual adjustments identified were then grouped into appropriate adjustment categories. The adjustment categories are derived primarily from a South African based study conducted by Howard (2016: 63), as influenced by the US based study by Bhattacharya *et al.* (2003: 312). Zhang and Zheng (2011: 189) also based their adjustment categories on those of Bhattacharya *et al.* (2003: 312). Table 10 below summarises the categories used by the three studies mentioned above and shows how these categories link to the categories used in this study. Standardising the adjustment categories into a few main categories not only enables comparisons with prior studies, but also make the interpretation of the results more manageable.

Table 10: Main categories of adjustments from prior studies linked to the categories used in this study

Bhattacharya <i>et al.</i> (2003: 312)	Zhang and Zheng (2011: 189)	Howard (2016: 63)	This study
Acquired in-process research and development costs written off.	Acquired in-process research and development costs written off.		Other adjustments.
Below the line items, which include extraordinary items, discontinued operations and the effect of changes in accounting policies.	Below the line items, which include extraordinary items, discontinued operations and the effect of changes in accounting policies.		Discontinued operations included in <u>Transaction and restructuring costs</u> All others included in <u>Other adjustments</u> .
	Restructuring charges.	Transaction and restructuring costs.	Transaction and restructuring costs.
	Write-offs due to asset impairment.	Impairment of assets.	Impairment losses/reversals of assets.
Depreciation and amortisation.	Depreciation and amortisation excluding amortisation on stock based compensation, intangibles and goodwill.	Depreciation and amortisation.	Interest, tax, depreciation and amortisation (ITDA).
	Intangible asset amortisation.		Interest, tax, depreciation and amortisation (ITDA).
Gains or losses from asset disposals.	Gains or losses from asset disposals.	Gains or losses from asset disposals.	Gains or losses from asset disposals.
Stock based compensation costs.	Stock based compensation costs.	Share based compensation costs.	Share based compensation costs.
Merger and acquisition costs.	Merger and acquisition costs.		Transaction and restructuring costs.
Other specific adjustments.	Other specific adjustments.	Other.	Other adjustments.
		Operating item/below the line.	Other adjustments.
		Tax related.	Interest, tax, depreciation and amortisation (ITDA).
No adjustment details provided in the press release.	No adjustment details provided in the press release.	Undeterminable.	Undeterminable.

Source: Own observation

In Table 10 above, similar categories used in the prior studies are shown in the same line as the related category used in this study. The inclusion of restructuring costs, impairment expenses and income, acquisition related costs, and the effect of non-current asset disposals as separate categories in this study is also considered as appropriate as the IASB (2016, para. 41) has identified that companies commonly make those adjustments when calculating EBITDA. During the data collection process, the researcher determined that restructuring costs and acquisition related costs are commonly combined and disclosed as one amount. Therefore, these two adjustments are grouped under transaction and restructuring costs.

Howard (2016: 63) includes in 'operating item/below the line', amongst others, fair value adjustments on financial instruments, foreign exchange gains or losses, employee benefit charges, and treasury share adjustments. The IASB (2017j: 8) determined that companies regularly include fair value adjustments on financial instruments, foreign exchange gains or losses on financing transactions as well as the unwinding of the discount on provisions in the 'interest'-adjustment when calculating EBITDA. In addition, the IASB (2017j: 8) has also identified that some companies adjust for equity accounted profit/loss when calculating earnings before interest and tax. Furthermore, when calculating EBITDA, other items which are also regularly adjusted for include transaction and restructuring costs, impairment losses and profit/loss from the sale of non-current assets (IASB, 2016: 11). Therefore, in describing the nature of EBITDA adjustments, additional categories were created to include the abovementioned EBITDA-specific adjustments made by South African companies, namely

- a category that includes fair value adjustments on financial instruments, foreign exchange gains or losses on financing transactions and as well as the unwinding of discount on provisions in the 'interest'-adjustment, and
- a category that includes equity accounted profit/losses.

This study is also interested in adjustments that are seen as invalid in providing a recurring earnings measure. Adjusting for legal expenses was identified in section 3.3.3 as invalid and, therefore, a separate category was created to include legal expenses.

Since the primary focus of this study is on EBITDA reconciliation quality, adjustments pertaining to interest, tax, depreciation and amortisation (ITDA), which inherently form part of an EBITDA reconciliation, were included in the category ITDA to separate these adjustments from other adjustments. Where the researcher was unable to place the adjustments to a particular category, the adjustments were categorised as undeterminable. The researcher was unable to reconcile EBITDA to IFRS earnings in 36 of the 220 SENS reports, even after using regular adjustments noted by the IASB or by attempting to adjust for other operating items. It is concerning to note that these 36 SENS reports include instances where EBITDA is defined (in other words, the company provides a formal definition of how EBITDA is calculated) and also six cases where a reconciliation in tabular format is provided, although mathematically the reconciliation does not cast, thus leaving an unreconciled difference. The total reconciling difference in these cases were categorised as undeterminable.

Based on Table 10 above, the main adjustment categories used in this study are listed below:

- ITDA-adjustments
- Impairment losses/reversals of assets
- Gains or losses on disposal of assets
- Share based compensation costs
- Legal fees

- Transaction and restructuring costs
- Fair value adjustments on financial instruments, foreign exchange gains/losses and unwinding of interest on provisions
- Equity accounted profit/losses
- Other adjustments separately identifiable in a SENS report
- Undeterminable type of adjustment.

As discussed in section 3.3.3, industry membership could affect management's decision on voluntary disclosure. It is, therefore, necessary to determine which companies report EBITDA so that the industry classification can be determined. Industry classification information for all companies except six was obtained directly from the JSE in Microsoft Excel format (JSE, 2018). The industry codes of the six companies that were not provided by the JSE were obtained from the Sharenet website (Sharenet, 2018).

3.4.1.2 Validity concerns around data capturing from SENS reports

Mouton (2001, chap. 7) discusses common errors that may occur during the data capturing process. A discussion on the way in which such validity concerns were addressed when the data was captured from SENS reports follows.

Potential errors in data capturing

Mouton (2001, chap. 109) lists the following common errors that may occur when capturing data:

- Capturing errors
- Post-coding errors

- Missing values

Since data from the SENS reports was manually captured on a Microsoft Excel sheet, there was a possibility that data capturing errors could occur. However, various steps were taken to limit this risk. Firstly, to verify that the amounts were correctly input, the reconciled amount was recalculated using the EBITDA measure and adding/subtracting the reconciling items. A control total column identified any differences that could then be rectified. Where an EBITDA measure did not reconcile (particularly where a disclosure score of one was assigned), all amounts were verified for accuracy. For a random sample of 30 SENS reports, the researcher obtained the assistance of an Honours graduate in Accounting to verify the accuracy of the data capturing.

Post-coding errors may result if the way in which the emphasis score and the EBITDA disclosure score is assessed is coded differently in the various SENS reports. However, this risk was mitigated as one researcher only coded all the scores. However, to ensure that the coding and, therefore, that the awarding of scores was performed consistently, the scoring of a random selection of SENS reports was repeated by an Honours graduate in Accounting. Any discrepancies identified were assessed for a recurring coding error by the researcher.

Statistical software was used to identify any instances of missing values. This indicated whether a particular data field was incomplete. Apart from those observations that were specifically excluded from the population (as discussed previously), any missing values were followed up on and rectified.

3.4.2 Research objectives three and four

3.4.2.1 Data collection

Following the collection of the data required to address the first two research objectives, company financial data and other proxy information relating to factors affecting the reconciliation quality, as identified in section 3.3.3, were extracted from the IRESS database. The data collected to address research objective three, together with the reconciliation score determined by meeting the second research objective, was now used to apply the regression analysis to realise the final research objective.

3.4.2.2 Validity concerns around company data captured from IRESS

The validity concerns when capturing company data from the IRESS database were minimal as no manual input occurred. The data from the IRESS database was extracted in Microsoft Excel format. Using the JSE ticker as a unique identifier, the vlookup functionality in Microsoft Excel was then used to combine the company specific data with the data which had already been collected in order to realise the first and second research objectives. Random checks were made to ensure that the data was accurately transferred to the main data file. As with the first and second research objectives, statistical software was used to identify possible instances of missing values. However, none were identified.

This section ended the discussion on the data collection. The next section contains a general conclusion to Chapter 3.

3.5 CONCLUSION

Chapter 3 commenced by discussing the philosophical stance adopted in this study. It then described the research designs that are used to meet the research objectives and provided

details of the way in which the data collection process was undertaken. The chapter also discussed specific problems which were encountered during the data collection process and how these problems were addressed. Finally, validity concerns pertaining to the research designs and data collection process were discussed. The next chapter presents the research findings in relation to meeting the stated research objectives.

CHAPTER 4: RESEARCH FINDINGS

4.1 INTRODUCTION

The previous chapter discussed the research designs that were used to address the research objectives. This chapter sets out the research findings sequentially, per research objective. These research findings emanated from using the research designs.

4.2 RESEARCH OBJECTIVE ONE

This section focuses on the results which were required to meet the first research objective, namely, to describe the nature of ‘earnings before interest, tax, depreciation and amortisation’ (EBITDA) reporting in the SENS reports of JSE-listed companies. The section commences by determining whether companies use EBITDA in a standardised fashion, in line with the accepted definition of the concept, namely, by excluding interest, tax, depreciation and amortisation only when calculating EBITDA from the IFRS profit/loss for the year. In addition, the section also highlights the diversity in the adjustments made by companies in arriving at EBITDA by identifying the main types of adjustment categories. Lastly, the section presents the industry concentration of SENS reports in which EBITDA were disclosed as performance measure.

4.2.1 Results of research objective one: Describing the nature of EBITDA reporting

The first step involved determining how management referred to EBITDA when discussing company performance. During the data collection process, it was found that the SENS reports differed in their use of the term EBITDA while terms other than EBITDA were also used; for example, ‘normalised EBITDA’ and ‘EBITDA before once-off items’. These latter two examples provide a user of a SENS report with an indication that EBITDA has been

derived, not only by adjusting for interest, tax, depreciation and amortisation, but also by adjusting for other items. In such instances, a user is informed that the EBITDA measure is not standardised. In describing the nature of EBITDA reporting, this first step placed specific focus on those instances in which the SENS reports referred solely to EBITDA (with no mention of adjustments other than interest, tax, depreciation and amortisation), but then adjusted for items other than interest, tax, depreciation and amortisation. In such instances, the users of the SENS reports see only the term EBITDA that was used. Consequently, users may be misled into believing that EBITDA is used in standardised fashion, without any adjustments for items other than interest, tax, depreciation and amortisation being made. Table 11 below summarises the way in which EBITDA was referred to in the companies' performance discussions in their SENS reports. The occurrences of the various terms used in the SENS reports are provided per year, and in total, and sorted from most frequent to the least frequent.

Table 11: List of EBITDA references in SENS reports and the frequency of occurrences per year for the period 2014 to 2016 (N = 220)

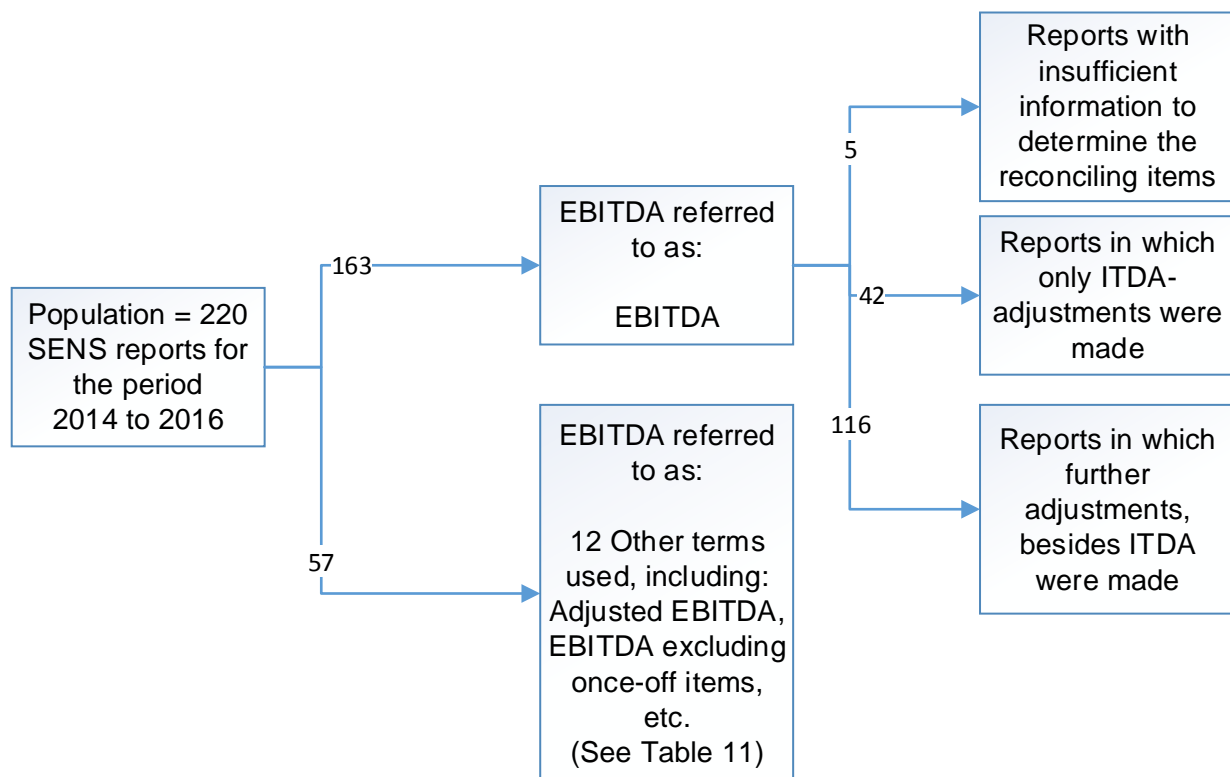
	EBITDA reference	2014	2015	2016	Total
1	EBITDA	53	56	54	163
2	Adjusted EBITDA	5	5	7	17
3	Normalised EBITDA	5	3	5	13
4	Underlying EBITDA	3	3	5	11
5	EBITDA excluding special items	1	1	1	3
6	Operational EBITDA	1	1	1	3
7	Core EBITDA	0	1	1	2
8	EBITDA before capital items	0	1	1	2
9	EBITDA excluding special items and income from associates and joint ventures	0	1	1	2
10	EBITDA from continuing operations	1	0	0	1
11	EBITDA excluding once-off items	1	0	0	1
12	Headline EBITDA	1	0	0	1
13	Operating EBITDA	0	0	1	1
	Total	71	72	77	220

Source: Own observation

Table 11 above shows that the companies varied in the way in which they referred to and reported on EBITDA. Although the majority – 163 of the total 220 SENS reports – referred to the term EBITDA only (with no indication of other adjustments), a variety of other references to EBITDA were also used. Of main interest is the extent to which the 163 SENS reports that disclosed the term EBITDA only when using it as a measure of performance (see number one in Table 11 above), made additional adjustments besides interest, tax, depreciation and amortisation (ITDA). Where only the term EBITDA is disclosed in a SENS report, the user of the SENS report would be likely to expect the only adjustments used in deriving the EBITDA measure were ITDA-adjustments. Contrast this with a term such as ‘EBITDA excluding once-off items’, which provides the user of the SENS report with an

indication that the EBITDA measure was derived at not only by adjusting for ITDA-adjustments, but also by making other adjustments. Of the 163 (of 220) SENS reports that referred to EBITDA only, 116 (53% of the total population) adjusted for items other than ITDA. Figure 13 below illustrates this finding by illustrating how the SENS reports referred to EBITDA in the performance discussions, and whether additional adjustments (other than ITDA) were made. In five of the SENS reports, insufficient information was provided to determine whether ITDA-adjustments only had been made.

Figure 13: Overview of findings: How SENS reports referred to EBITDA and the types of adjustments made for the period 2014 to 2016 (N = 220)



Source: Own observation

Figure 13 above illustrates that the majority of SENS reports, although disclosing EBITDA as a standardised measure, also made adjustments other than ITDA. In line with prior research that indicate that companies are inconsistent in how they adjust for EBITDA (section 2.3.4), this finding highlights that users of SENS reports should be wary of assuming that reported EBITDA is a standardised performance measure.

Besides referring to EBITDA using a particular term, as depicted in Table 11 above, some companies also provided a narrative explanation or definition of the EBITDA term. This was investigated further in the following step.

After the previous step that had investigated how companies referred to a particular EBITDA measure when discussing their performance, the next step investigated whether and, if so, how, companies defined the particular EBITDA measure they used narratively in their performance discussions. Whereas the previous step had revealed that companies referred to EBITDA in various ways, the results from this second step showed that the way in which companies defined EBITDA also varied widely. Besides those SENS reports that included the standard definition of EBITDA, namely, 'Earnings before interest, tax, depreciation and amortisation', it was surprising to identify a further 50 different definitions of EBITDA. Of the 50 different definitions, 27 related to SENS reports that referred to EBITDA only and 23 to SENS reports that referred to EBITDA that was adjusted for additional items besides ITDA-items. These definitions are presented in Table 12 below. Panel A in Table 12 presents the 27 definitions relating to the SENS reports that referred to EBITDA only and Panel B in Table 12 presents the 23 definitions that relate to the SENS reports that referred to an adjusted measure of EBITDA.

**Table 12: List of definitions of EBITDA contained in SENS reports for the period
2014 to 2016 (N = 220)**

	Panel A: Definitions of EBITDA as disclosed in the SENS reports in which EBITDA was referred to as 'EBITDA'
1	Earnings after BEE transactions but before interest, tax and depreciation.
2	Earnings before interest, tax, depreciation, amortisation and impairment losses.
3	Earnings before interest, tax and depreciation.
4	Earnings before interest, tax, depreciation and amortisation and adding back: Impairment or reversal of an impairment of an asset, fair value adjustments to financial instruments, stock-based compensation, foreign exchange gains and losses, and non-recurring transaction expenses or income.
5	Earnings before interest, tax, depreciation and amortisation and excluding foreign exchange movements.
6	Earnings before interest, tax, depreciation and amortisation and goodwill impairment losses.
7	Earnings before interest, tax, depreciation and amortisation and impairments of subsidiaries and including share in EBITDA before impairments in equity accounted investments.
8	Earnings before interest, tax, depreciation and amortisation excluding exceptional items and income from associates and joint ventures.
9	Earnings before interest, tax, depreciation and amortisation from core operations.
10	Earnings before interest, tax, depreciation and amortisation, fair value and impairment adjustments.
11	Earnings before interest, tax, depreciation and amortisation, impairments and before foreign exchange gains/losses.
12	Earnings before interest, tax, depreciation, amortisation and capital items.
13	Earnings before interest, tax, depreciation, amortisation, impairment of goodwill, net monetary gains and share of results of joint ventures and associates.
14	Earnings before tax, depreciation and amortisation.
15	Net operating earnings before depreciation and amortisation.
16	Net operating income.
17	Operating earnings before interest, tax, depreciation and amortisation.
18	Operating profit/loss adjusted for depreciation and amortisation.
19	Operating profit/loss before depreciation, amortisation and capital items.
20	Operating profit/loss before depreciation, amortisation and impairment.
21	Operating profit/loss before depreciation, amortisation and impairment of goodwill, intangibles, and property, plant and equipment.
22	Operating profit/loss before finance costs, depreciation and amortisation.
23	Operating profit/loss before interest, tax, depreciation and amortisation.
24	Operating profit/loss before interest, tax, depreciation and amortisation and including unrealised foreign exchange gain.
25	Operating profit/loss before interest, tax, depreciation and amortisation, impairment losses, unrealised foreign exchange differences on loans, and equity accounted profits.
26	Operating profit/loss before interest, tax, depreciation, amortisation, impairment losses, foreign exchange differences, and equity accounted profit/losses.
27	Operating profit/loss before items listed below (Author's comment: Shown as line items in SCI).

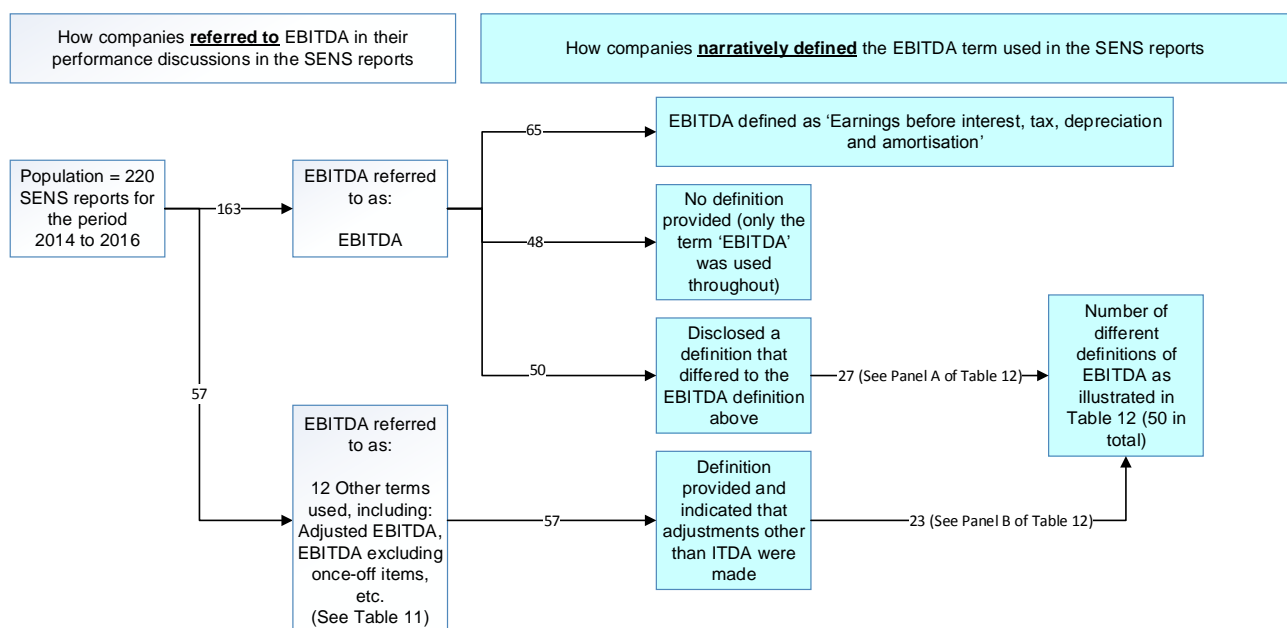
	Panel B: Definitions of EBITDA as disclosed in the SENS reports in which EBITDA was referred to as EBITDA with additional adjustments
1	Adjusted earnings before interest, tax, depreciation and amortisation
2	Adjusted EBIT is revenue less cost of goods sold and selling and administrative expenses plus share of income from associates and joint ventures, dividend income and the attributable share of underlying adjusted EBIT of certain associates and joint ventures and the discontinued agricultural products segment, excluding significant items. Adjusted EBITDA consists of adjusted EBIT plus depreciation and amortisation.
3	Adjusted EBITDA is defined as earnings before interest, tax, depreciation and amortisation and adding back the following: Impairment or reversal of an impairment of an asset, fair value adjustments to financial instruments, stock-based compensation, foreign exchange gains and losses, and non-recurring transaction expenses or income.
4	Core earnings before interest, tax, depreciation and amortisation.
5	Earnings after BEE charges but before interest, tax and depreciation.
6	Earnings before interest (net finance cost), taxation, depreciation, amortisation and special items.
7	Earnings before interest, tax, depreciation and amortisation adjusted for IFRS 2 charge, straight-lining of lease, and goodwill impairment.
8	Earnings before interest, tax, depreciation and amortisation and special items.
9	Earnings before interest, tax, depreciation and amortisation before special items and remeasurements.
10	Earnings before interest, tax, depreciation and amortisation before transaction costs.
11	Earnings before interest, tax, depreciation and amortisation excluding special items and income from associates and joint ventures.
12	Earnings before interest, tax, depreciation and amortisation, bargain purchase gain, impairments and loss on disposal of assets held for sale.
13	Earnings before interest, tax, depreciation, amortisation, impairments and loss on disposal of associate.
14	Normalised earnings before interest, tax, depreciation and amortisation.
15	Normalised earnings before interest, tax, depreciation excluding share-based payments, lease smoothing and transaction costs.
16	Operating profit/loss before depreciation, amortisation, special items and remeasurements.
17	Operating profit/loss before special items, depreciation and amortisation.
18	Operating profit/loss plus depreciation, amortisation of intangible assets, impairment of property, plant and equipment, and excluding profit/loss and fair value adjustments on disposal of businesses, fair value adjustments, transaction costs and surplus/deficit on retirement benefits.
19	Profit for the period before income taxes, net finance income/(costs) including foreign exchange gains/(losses), depreciation of property, plant and equipment including capitalised customer in-vehicle devices, amortisation of intangible assets including capitalised in-house development costs and intangible assets identified as part of a business combination, share-based compensation costs, transaction costs arising from the acquisition of a business or investigating strategic alternatives, restructuring costs, profits/(losses) on the disposal or impairments of assets or subsidiaries, insurance reimbursements relating to impaired assets and certain litigation costs.
20	Trading operating profit/loss before depreciation and amortisation.
21	Underlying EBIT before depreciation and amortisation. Underlying EBIT is profit from continuing operations before interest, tax, and earnings adjustments, including impairments, but including share in equity accounted interest and tax
22	Underlying EBIT before depreciation, amortisation and impairments. Underlying EBITDA is reported before net finance costs and taxation benefit/(expense), depreciation, amortisation and impairments related to equity accounted investments and excluding exceptional items

	Panel B: Definitions of EBITDA as disclosed in the SENS reports in which EBITDA was referred to as EBITDA with additional adjustments
23	Underlying EBIT before depreciation, impairments and amortisation

Source: Own observation

Although a shortcoming in the above observations is that not all companies incur similar types of expenses, in which case they may have provided similar definitions, Table 12 above provides evidence that the companies' definitions of EBITDA vary widely. Figure 14 below links to findings in Figure 13 above (which showed how SENS reports referred to EBITDA) and contrasts the number of SENS reports that defined EBITDA as 'Earnings before interest, tax, depreciation and amortisation' with the SENS reports that provided alternative definitions. Figure 14 also shows that 48 of the SENS reports included no narrative definition of EBITDA.

Figure 14: Overview of findings: How SENS reports referred to and defined EBITDA for the period 2014 to 2016 (N = 220)

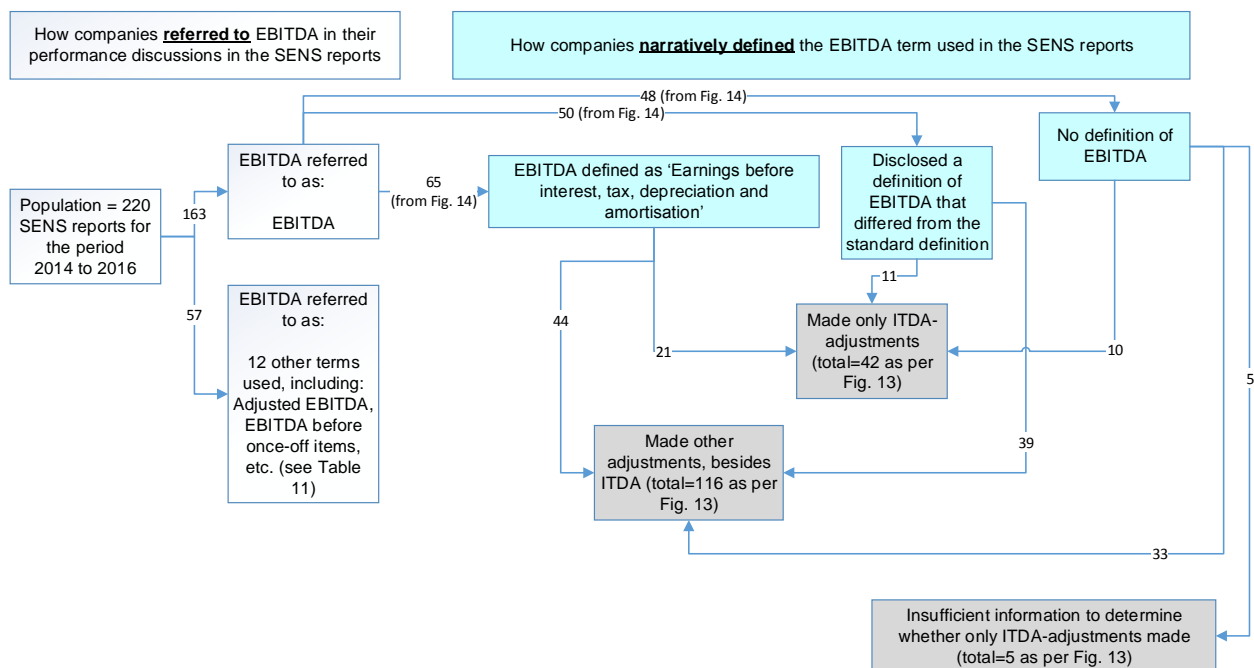


Source: Own observation

Based on Figure 14 above, the 65 SENS reports that disclosed the standard definition of EBITDA and the 48 SENS reports that provided no narrative definition of EBITDA were explored further in order to provide more evidence on the diversity of EBITDA disclosure. These two groups are discussed sequentially in more detail below.

During the first step in presenting descriptive evidence on the nature of EBITDA reporting, it was shown that 163 of the total population of 220 SENS reports had referred to the term EBITDA only, without including in the reference words such as 'adjusted' or 'underlying' to show that adjustments other than interest, tax, depreciation and amortisation (ITDA) were made. However, as seen earlier in Figure 13, 116 of the 163 SENS reports eventually went on to adjust for items other than ITDA. Such a discrepancy may be misleading to users unless the EBITDA term used in the SENS report is also narratively defined to indicate to the user which further adjustments were made. Figure 15 below links the observations in Figures 13 and 14 above in order to highlight the discrepancies between the SENS reports that referred to the term EBITDA only, then also narratively defined EBITDA as 'Earnings before interest, tax, depreciation and amortisation' but eventually adjusted for other items besides interest, tax, depreciation and amortisation. Figure 15 also highlights the number of SENS reports in which the term EBITDA was used with no narrative definition provided, and shows how companies differed in whether they adjusted for interest, tax, depreciation and amortisation only or also adjusted for other items.

Figure 15: Discrepancies between how SENS reports referred to, defined and calculated EBITDA for the period 2014 to 2016 (N = 220)



Source: Own observation

As seen in Figure 15 above, of the 163 SENS reports that referred only to the term, EBITDA, 65 SENS reports also defined EBITDA using the standard definition of 'Earnings before interest, tax, depreciation and amortisation'. Of the remaining SENS reports, 50 provided definitions other than the standard definition and 48 provided no narrative definition at all.

Of the 65 SENS reports that provided no indication, either in their reference to EBITDA or in their definition of EBITDA, that adjustments other than ITDA had been made, 44 SENS reports went on to adjust for items other than interest, taxation, depreciation and amortisation. The remaining 21 of the 65 SENS reports made ITDA-adjustments consistent with the EBITDA term used and the definition provided. This evidence shows that, even where SENS reports refer to EBITDA only (with no indication of adjustments) and provide

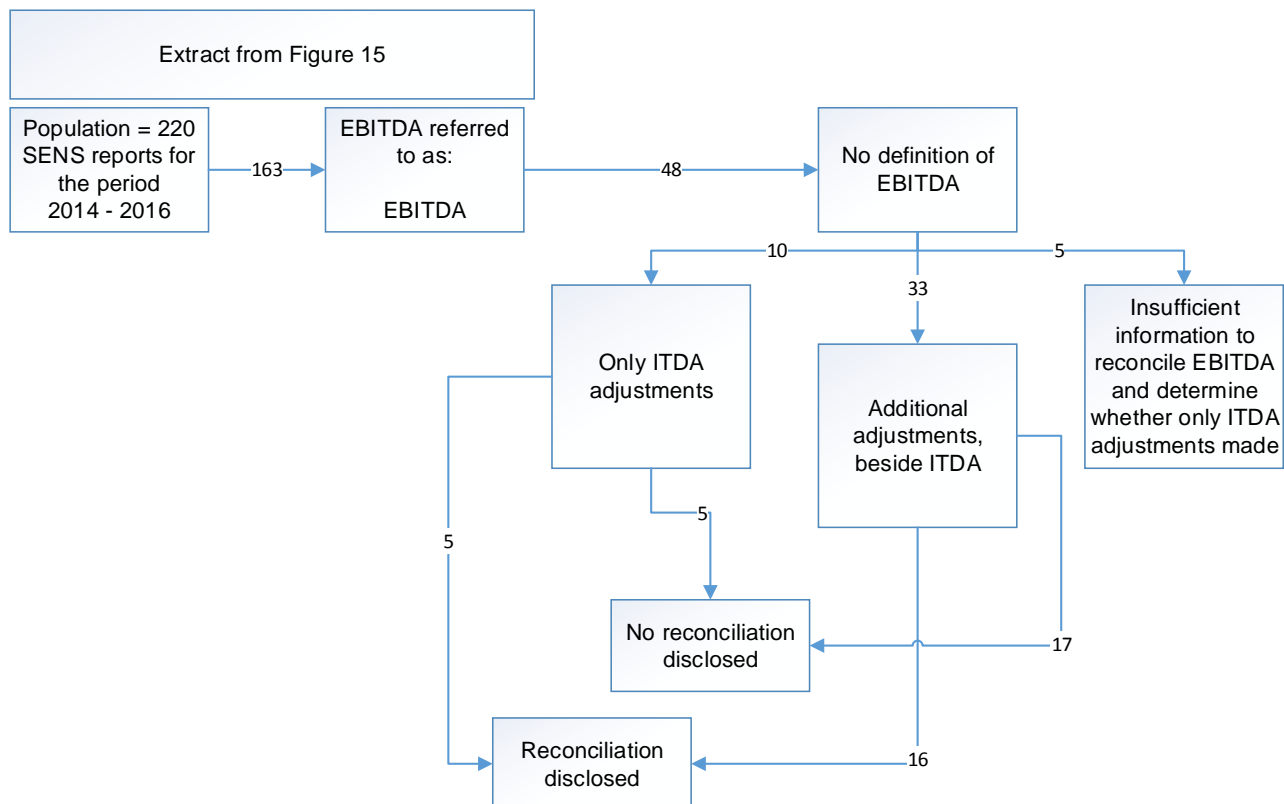
the standard definition, users of SENS reports should be wary of assuming that EBITDA has been calculated by adjusting only for interest, taxation, depreciation and amortisation.

In addition to the finding above, users should also be wary of assuming that companies adjust for all the items reflected in the narrative definitions of EBITDA. Of the 163 SENS reports discussed above, 50 SENS reports that used the EBITDA reference only (with no indication in the reference of adjustments other than ITDA-items) provided a narrative definition to indicate that adjustments other than ITDA were made. Despite this, 11 of these 50 SENS reports did not go on to adjust for other items. Thus, these 11 SENS reports adjusted for ITDA-items only although the narrative definition indicated that adjustments other than ITDA were made in calculating EBITDA. A shortcoming in this finding is that a company may not have incurred a particular type of expense (as stated in the EBITDA definition), in which case no adjustment would be made for the item. An example of this shortcoming is the 2015 SENS report of Advanced Health Limited where EBITDA was defined as 'Earnings before interest, impairment, tax, depreciation and amortisation', but where no adjustment for impairment losses were made since the company incurred none in 2015 (Advanced Health Limited, 2015). Despite this shortcoming, the inconsistent manner between how EBITDA was referred to, defined and eventually calculated may provide management with the opportunity to mislead users.

The last group of SENS reports of particular interest was the 48 of 163 SENS reports that referred to EBITDA only (with no indication of further adjustments) and provided no narrative definition of how EBITDA was calculated. Of these 48 SENS reports, 10 only adjusted for ITDA-items while 33 of the SENS reports adjusted for other items as well. The remaining five SENS reports lacked the information necessary to reconcile EBITDA to IFRS earnings and, thereby, determine whether ITDA-adjustments only were made. Figure 16 below

presents the findings pertaining to the 48 SENS reports that referred only to the acronym EBITDA, without providing a clarifying definition.

Figure 16: Overview of findings: SENS reports that referred to the EBITDA acronym only without providing a definition



Source: Own observation

Figure 16 above shows that, of the 33 SENS reports that adjusted for items other than ITDA, 16 of these SENS reports disclosed a reconciliation. Therefore, although the reference to EBITDA (without mentioning adjustments) was not supported by any definition, the reconciliation provided all the information necessary to understand how the EBITDA measure was calculated. The remaining 17 of the 33 SENS reports provided no additional reconciliation. However, after also adjusting for impairment losses, profit/loss from sale of assets, equity accounted profits/losses, fair value adjustments on financial instruments and

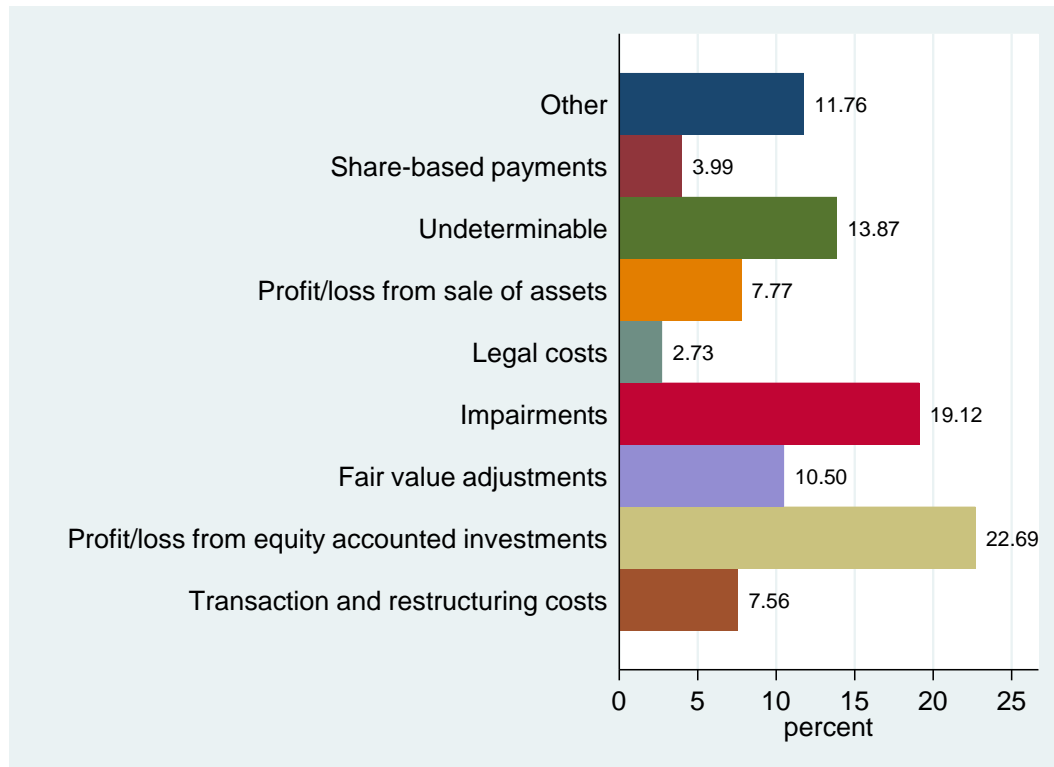
foreign exchange gains/losses, it was possible to reconcile the EBITDA amounts in eight of the 17 SENS reports to the IFRS profit/loss. This confirms the findings by the IASB that companies regularly also adjust for these items when deriving EBITDA although they do not explicitly state that they are doing so (IASB, 2016: 11).

Figure 16 above shows that, of the ten SENS reports in which EBITDA were reconciled to IFRS earnings by adjusting for the ITDA-items only, five SENS reports disclosed no reconciliation. A further inspection of these five SENS reports that did not disclose any reconciliations showed that, although those companies also had items such as impairment losses and fair value adjustments on financial instruments, they did not adjust for those items in deriving the EBITDA. For example, the 2016 SENS report of Tharisa Plc (Tharisa Plc, 2016) revealed that the company had incurred impairment losses and fair value adjustments on financial instruments, but had not added these back when calculating EBITDA. Similarly, the 2015 SENS report of Omnia Holdings Limited (Omnia Holdings Limited, 2015) showed that the company had had a profit on disposal of assets as well as impairments losses, neither of which was adjusted for in deriving the EBITDA amount as disclosed. Read together with the findings mentioned earlier, these findings illustrate that companies are inconsistent in how they adjust for EBITDA, even when they have similar expenses.

The next step involved determining the nature and frequency of the adjustments made between EBITDA and IFRS profit/loss. Before grouping individual adjustments into the main adjustment categories proposed by Howard (2016: 63), 63 individual types of adjustments, other than ITDA-items, were identified across the 220 reports. The individual adjustments were then categorised by using the adjustment categories listed in section 3.4.1. For the 220 SENS reports over the three-year period, Figure 17 below illustrates the frequency of

occurrence of the different types of adjustments, other than ITDA-adjustments, that companies make when calculating EBITDA.

Figure 17: Relative frequency of EBITDA adjustments in SENS reports from 2014 to 2016 (N = 220)



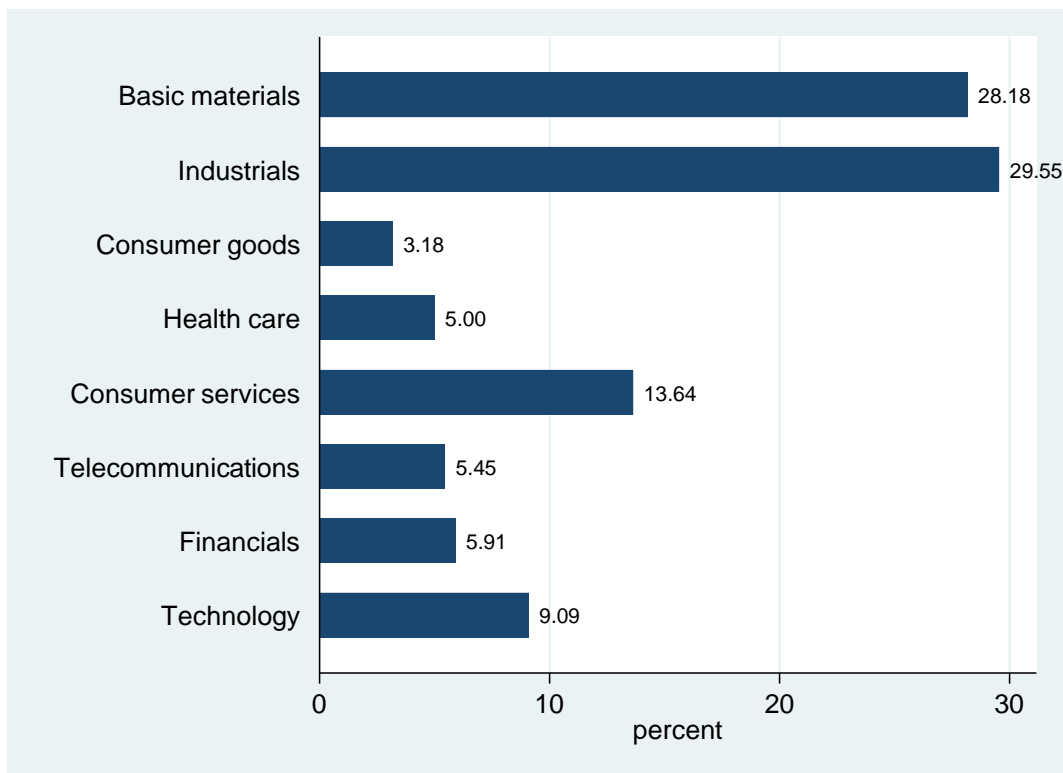
Source: Own observation

The results presented in Figure 17 above indicates that the adjustment types most commonly made included profit or loss from equity accounted investments (23% of all reports) and impairment losses or reversals (19% of all reports) while 11% of all reports adjusted for fair value adjustments, such as fair value gains/losses and foreign exchange gains/losses, as well as the unwinding of interest on provisions. These results support the findings by the IASB (2017j: 8) that several companies deem such items to be part of finance

income/expenses and they are, thus, considered as part of the EBITDA adjustment. In line with the findings by the IASB (2016: 11), some companies also adjust for profit/loss from sale of assets, and transaction and restructuring costs. However, it is concerning to note that, in 14% of all the reports, it was not possible to determine the adjustment category. In instances where no clear reconciliation was disclosed, users were left with no clear understanding of how EBITDA had been calculated. Finally, adjustments for share-based payments and legal costs, which are deemed invalid adjustments (see section 3.3.3), were also identified in some of the reports. These latter results will be used when performing the main regression – See section 4.4.

In order to determine whether EBITDA reporting is driven by industry membership, descriptive statistics on industry dispersion in the population were obtained. Figure 18 below illustrates how the concentration of SENS reports containing EBITDA as performance measure were distributed per industry.

Figure 18: Industry concentration of EBITDA reporters in SENS reports from 2014 to 2016 (N = 220)



Source: Own observation

As seen in Figure 18 above, with the exception of the oil and gas industry and the utilities industry (not reflected in Figure 18), EBITDA is used as a performance measure in all industries. The highest concentration is found in the following industries, making up 81% of the total population: Industrials (30%), basic materials (28%), consumer services (14%) and technology (9%). The results for industrials, basic materials and consumer services are consistent with the findings of Howard (2016: 60). Howard (2016: 60) found that, for South African companies that disclose non-GAAP earnings in their annual reports for the period 2010 to 2014, the highest concentration of companies was in the financial industry, followed by consumer services, basic materials, consumer goods and then industrials. Two key differences were in the financial industry and the technology industry. The finding in this

study that 5.9% of all company-years (i.e. SENS reports) that reported EBITDA pertained to the financial industry is somewhat surprising as the interest income and finance costs make up a major portion of the operating profit of several of the companies in the financial industry. The technology industry makes up 9.1% only of all company-years. Within a South African context this finding is in line with that of Howard (2016: 60) who found that, as disclosers of non-GAAP earnings, companies in the technology industry do not even list among the top five industry concentrations. When compared to international studies, the concentration of non-GAAP reporting by South African technology companies is also much lower. In Zhang and Zheng's (2011: 192) study of companies listed on major stock exchanges in the United States from 1998 to 2001, 59.1% of their sample consisted of companies in the high-technology sector. In contrast, in their sample of the top 500 Australian listed companies from 2000 to 2014, Coulton *et al.* (2016: 20) found the highest concentration of non-GAAP reporters to be in the financial sector, although they found that companies in the utilities sector were the most likely to disclose non-GAAP earnings.

The findings in this study suggest that the lower concentration of SENS reports (containing EBITDA as performance measure) in the technology industry will be less of an influencing factor when running the main regression (see section 4.4). Therefore, as discussed in section 3.3.4, the main regression controls for industry membership of all industries, rather than membership of the technology industry only.

4.2.2 Conclusion on research objective one: Describing the nature of EBITDA reporting

The aim of section 4.2 was to meet the first research objective by describing the nature of adjustments companies make when calculating EBITDA in their SENS reports. The results

showed that EBITDA should not be seen as a standardised measure and that considerable diversity exists between the way in which South African JSE-listed companies calculate and explain the composition of EBITDA. This finding supports the concern raised by both the IASB and analysts (see section 2.3.4) that, also in a South African context, the adjustments made to arrive at EBITDA are inconsistent between companies. The section then identified the main categories of adjustments, which are generally consistent with the findings of the IASB. Lastly, the section provided a summary of industry concentration of SENS reports that disclose EBITDA as performance measure and showed that the major concentration is found in the basic materials and industrial industries. The findings in this section emphasise the need for companies to provide explicit reconciling information to enable users to reconcile a company's measure of EBITDA and its IFRS earnings. In the absence of an adequate reconciliation, there is an opening for management to use EBITDA opportunistically and to hide their intent through poor disclosure. The following section presents the results in relation to meeting the second research objective.

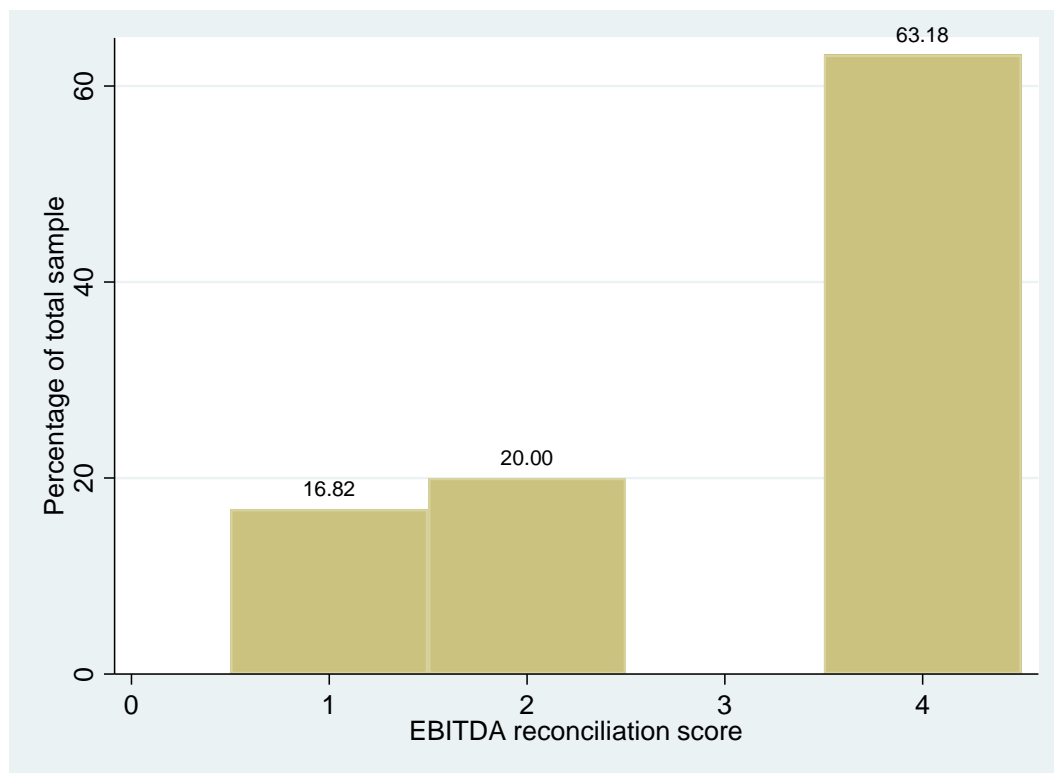
4.3 RESEARCH OBJECTIVE TWO

The previous section showed that the adjustments made in calculating EBITDA varied widely between the SENS reports and also highlighted the need for companies to provide a reconciliation between EBITDA and IFRS earnings. This section focuses on assessing the quality of the reconciliations provided by the companies, thereby providing the results necessary to meet the second research objective. The section also investigates whether the reconciliation quality is associated with industry membership and size.

4.3.1 Results of research objective two: Assessing EBITDA reconciliation quality

The score sheet developed in section 3.3.2 was used to award an EBITDA reconciliation score to each SENS report in the population of 220 SENS reports. Figure 19 below shows the distribution of the EBITDA reconciliation scores that were awarded to the SENS reports.

Figure 19: Distribution of EBITDA reconciliation scores in SENS reports from 2014 to 2016 (N = 220)



Source: Own observation

Figure 19 above shows that, of the total population of 220 SENS reports, approximately 17% included the acronym, EBITDA, without any further explanation of how the amount reconciled to a measure of the IFRS earnings. This could indicate either that the management of such companies see EBITDA as a standardised measure, requiring no

further explanation, or that they potentially wish to obscure how they derived the EBITDA. Recall that instances when the acronym EBITDA was included as a line item in the SCI, a score a four was awarded. The study found 20% of all SENS reports provided a narrative definition of EBITDA, but no accompanying adjusting amounts and, therefore, these companies scored a two. No instances were identified where a SENS report scored a three; i.e. where a company disclosed the nature and amount of reconciling items but not in a tabular format nor on the SCI.

Figure 19 above shows that the majority of the SENS reports (63%) included a tabular reconciliation to a measure of the IFRS earnings, either by including the EBITDA measure as a line item in the SCI, or by providing a tabular reconciliation to a line item included in the SCI. In view of the fact that the focus in this case is on EBITDA, the results are not directly comparable to prior studies that investigated the reconciliation quality pertaining to all non-GAAP earnings measures, although these results are in line with the findings from other studies. For example, in their sample of the press releases of 989 European listed companies from 2008 to 2011, Aubert and Grudnitski (2014: 158) found that 89% of their sample provided, at the minimum, the nature and magnitude of the adjustments as reconciling information. In addition, Coulton *et al.* (2016: 20) found that 90% of their sample of the top 500 Australian-listed companies provided a reconciliation in 2014, although Coulton *et al.* did not distinguish between the quality of the reconciliation. In their sample of US-listed companies from 1998 to 2001, Zhang and Zheng (2011: 191) found that just below 50% of their sample disclosed a detailed reconciliation. Overall, when considering reconciliations as a tool for management to provide more complete and, therefore, decision-useful information, the results show that, although the majority of JSE-listed companies meet the objective as stipulated in the Conceptual Framework, a significant portion (17%) do not.

Of the 63% (139 of the total 220) in Figure 19 with a score of four, 82 (37% of 220) included EBITDA as a line item on the SCI while the remaining 57 (26% of 220) provided a tabular reconciliation to a line item on the SCI. Where EBITDA is included as a line item on the SCI, the IASB (2017a: 8) is of the view that such companies will be seen only as complying with IFRS standards if the report presents the expenses based on their nature and not on their function. A cursory inspection of a random selection of the 82 SENS reports mentioned above showed that various companies disclosed EBITDA as a line item on the SCI, although the presentation of profit/loss was done by function of the expenses and not by the nature of the expenses. For example Workforce Holdings Limited's 2016 SENS report (Workforce Holdings Limited, 2017), Ansys Limited's 2016 SENS report (Ansys Limited, 2016) and RCL Food Limited's 2015 SENS report (RCL Food Limited, 2015) all included EBITDA as a line item on the SCI and presented their profit/loss by function of expense. Such an occurrence is, however, outside of the scope of this study although the question remains as to whether those companies view their disclosure as complying with IFRS standards, or whether they are unaware of the IASB's view that doing so means not complying with IFRS standards.

Table 13 below summarises the reconciliation scores per SENS report according to the mean market capitalisation at the end of each year. The descriptive statistics suggest that the larger companies (measured in terms of the mean market capitalisation in Rmillion) are more likely to provide a detailed reconciliation between EBITDA and IFRS earnings as compared to the smaller companies.

Table 13: Mean market capitalisation (Rm) of company-years per reconciliation score and per year (N = 220)

	2014	2015	2016	Total
Recon- ciliation score	Mean market capitalisation Rm	Mean market capitalisation Rm	Mean market capitalisation Rm	Mean market capitalisation Rm
1	16 161	10 374	18 558	15 153
	n = 15	n = 11	n = 11	n = 37
2	9 833	30 510	14 613	18 873
	n = 14	n = 16	n = 14	n = 44
4	57 972	25 510	49 350	44 237
	n = 42	n = 45	n = 52	n = 139
Total	39 646	24 309	38 636	34 273
	n = 71	n = 72	n = 77	n = 220

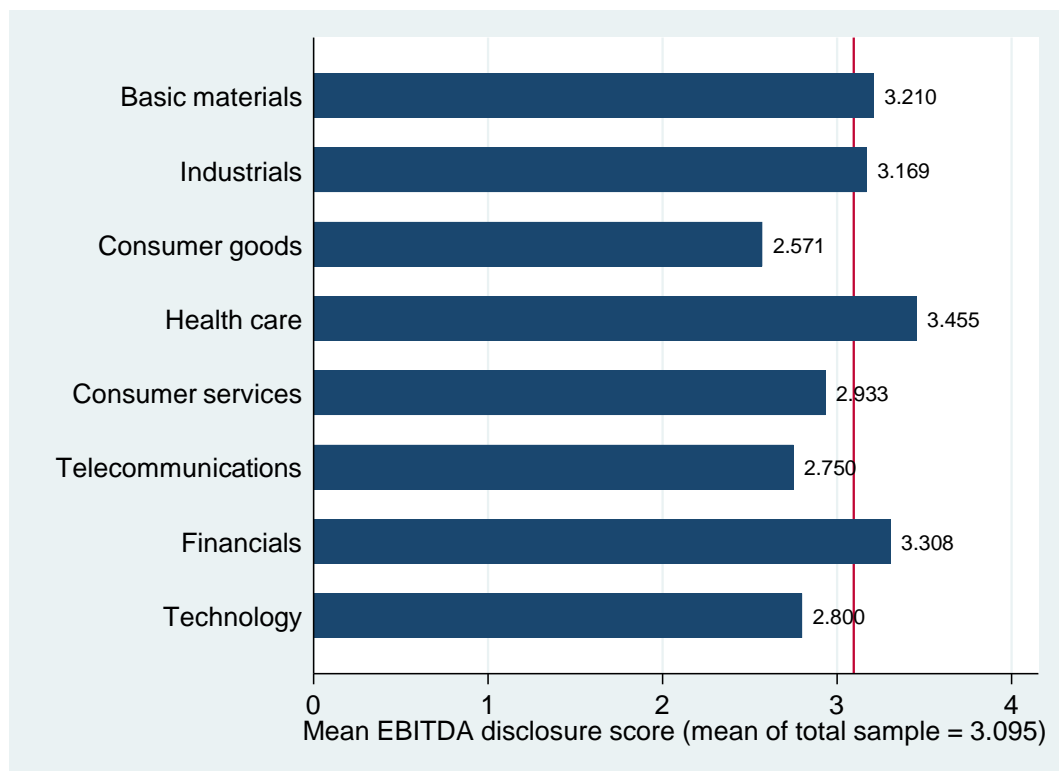
Source: Own observation

Table 13 above shows that the results between scores one and two are mixed between the years. There are no results for score three. In 2014 the mean market capitalisation of the companies that disclosed a narrative reconciliation (score two) was R9 833 million, in contrast with the mean market capitalisation of R16 161 million for companies disclosing the acronym, EBITDA, only. In 2015 the companies that scored a one were smaller (market capitalisation of R10 374 million) in comparison with a mean of R30 510 million market capitalisation for companies that scored a two. The 2016 results for scores one and two again followed the trend noted in 2014. However, in all three years the mean market capitalisation of companies that scored a four were higher than that of companies with scores of one and two. When all the company-years are assessed in total, the results show that, overall, a higher mean market capitalisation is associated with a higher disclosure

score. This result is consistent with the findings of prior studies, namely, that company size is positively associated with the level of detail of disclosure (Raffournier, 1995: 262).

Figure 20 below presents the mean EBITDA disclosure score per industry. The vertical line depicts the mean of the total population – 3.095.

Figure 20: Mean EBITDA reconciliation score per industry for the period 2014 to 2016 (N = 220)



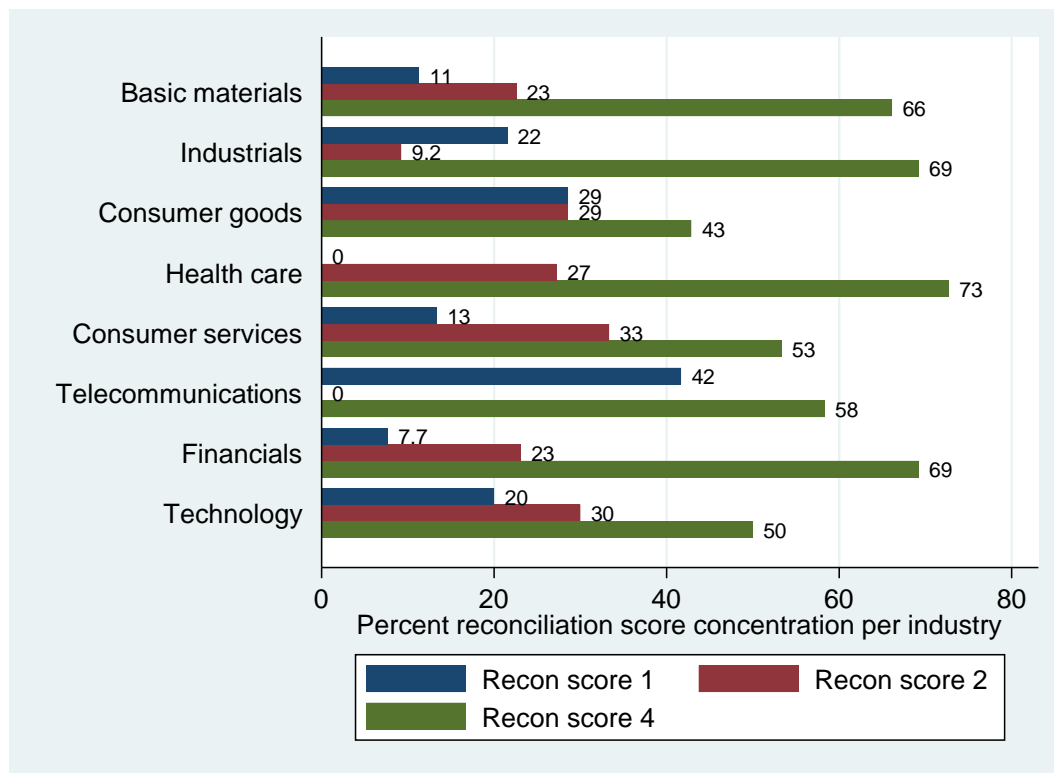
Source: Own observation

The results in Figure 20 above show that the mean reconciliation scores of the consumer goods, consumer services, telecommunications and technology industries are just below the population mean. The dispersion of the reconciliation scores across the industries are similar

and all tend to provide more detailed reconciliations. This is in line with the findings of Zhang and Zheng (2011: 191) who found no clear concentration of higher reconciliation scores in particular industries.

Figure 21 below contrasts, per industry, the frequency of SENS reports with disclosure scores of one, two or four. It confirms the findings on the higher reconciliation score, as discussed above, but indicates that more variation exists between scores one and two. In particular, there was no report that scored a one in the health care industry (i.e. where only the EBITDA acronym was reported), in contrast to the telecommunications industry where there was no report that scored a two and only reports that disclosed the EBITDA acronym. Overall, it would appear that there is a relationship between industry membership and the reconciliation quality and this must be controlled for when running the main regression in section 4.4.

Figure 21: Relative frequency of EBITDA reconciliation scores per industry for the period 2014 to 2016 (N = 220)



Source: Own observation

4.3.2 Conclusion on research objective two: Assessing EBITDA reconciliation quality

This section presented descriptive statistics to show the dispersion of EBITDA reconciliation scores in the 220 SENS reports of JSE-listed companies for the period 2014 to 2016. It was found that more than 60% of the population disclosed detailed reconciliations, either by including EBITDA as a line item in the SCI or by disclosing a tabular reconciliation. On average, the companies in all industries provide detailed reconciling information, although a variation was identified in the lower reconciliation categories one and two. In line with prior studies, the section also showed that company size is positively associated with the detail of disclosure provided. Furthermore, the findings in this section provide data on

reconciliation quality and the impact of industry and size, which will be used in the main regression in section 4.4.

4.4 RESEARCH OBJECTIVES THREE AND FOUR

The previous section described the dispersion of reconciliation scores in the population. It also showed that EBITDA disclosure is not highly concentrated in any one industry but that, on average, larger companies tend to provide higher quality reconciliations. This section uses the results from the previous section and reports on the results in respect of meeting both research objectives three and four. The results are combined in this section as the descriptive statistics used in meeting objective three relate closely to the results used in meeting objective four.

Research objective three set out to identify factors that are linked to opportunistic disclosure, together with identifying other factors that may have an influence on reconciliation quality. These factors were identified in section 3.3.3. However, this section provides descriptive statistics of how those factors identified in section 3.3.3 are present in the population in order to provide preliminary evidence of the association between the variables of the main regression.

In meeting research objective four, the discussion above is followed by the results from the main OLS regression, which was explained in section 3.3.4. The main regression attempts to establish the association between reconciliation quality and the factors associated with opportunistic disclosure, thereby meeting research objective four.

4.4.1 Results of research objective three: Identifying factors linked to opportunistic disclosure

The main regression model, as described in section 3.3.4, will be referred to as model 1 and is as follows:

$$RECONSCORE_{it} = \beta_0 + \beta_1 EMPHASIS_{it} + \beta_2 AVOID_LOSS_{it} + \beta_3 INVALID_ADJ_{it} + \beta_4 CY_LOSS_{it} + \beta_5 INDUSTRY_DUMMY_{it} + \beta_6 SIZE_{it} + \beta_7 ADJUST_{it} + \varepsilon$$

where, for company i in year t :

- $RECONSCORE_{it}$ is the EBITDA reconciliation scores of one to four
- $EMPHASIS_{it}$ equals one if EBITDA was mentioned before IFRS earnings in the SENS report, and zero otherwise
- $AVOID_LOSS_{it}$ equals one if EBITDA is positive while IFRS earnings is negative, and zero otherwise
- $INVALID_ADJ_{it}$ equals one if the SENS report adjusted for items deemed invalid in deriving EBITDA (see section 3.3.3), and zero otherwise
- CY_LOSS_{it} equals one if the company experienced an IFRS loss in year t , and zero otherwise
- $INDUSTRY_DUMMY_{it}$ is a dummy variable to control for industry membership
- $SIZE_{it}$ is the natural log of the market capitalisation of company i at the end of year t , and
- $ADJUST_{it}$ equals one if, in deriving at EBITDA, the SENS report adjusted for items other than interest, tax, depreciation and amortisation, and zero otherwise.

Section 3.3.3 identified *EMPHASIS*, *AVOID_LOSS* and *INVALID* as factors associated with opportunistic disclosure. Table 14 below presents descriptive statistics on the variables used in the main regression set out above.

Table 14: Descriptive statistics of variables used in main regression (N = 220)

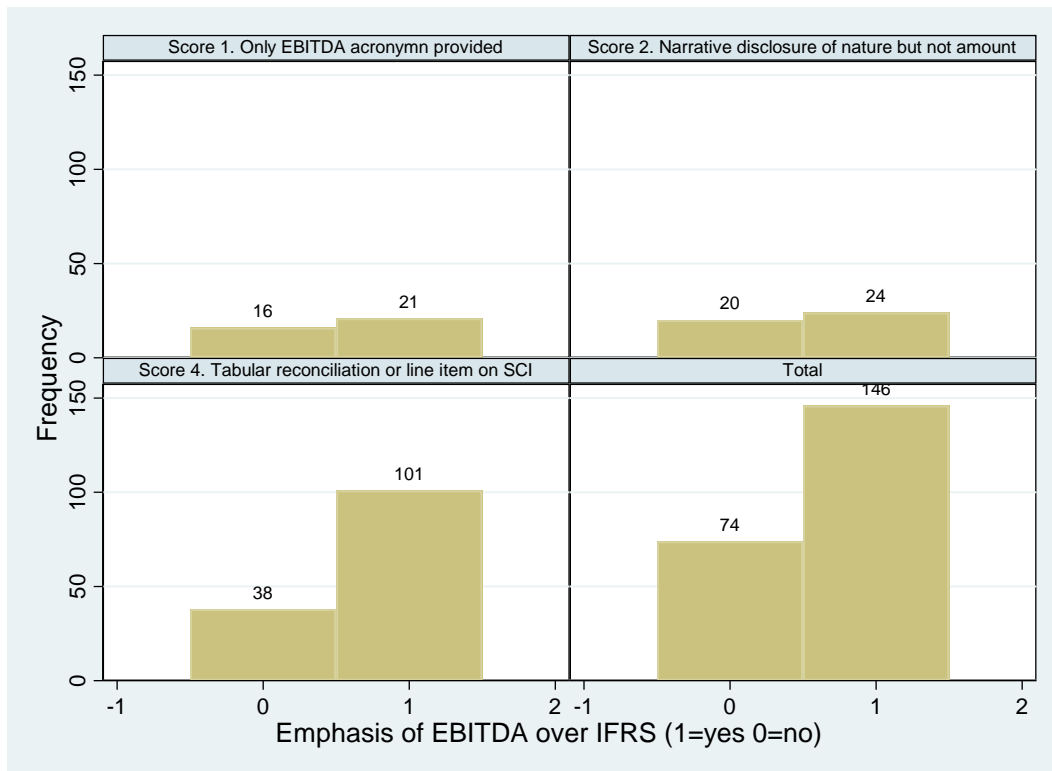
Variable	Mean	Std. Dev.	Min	Max
<i>EMPHASIS</i>	0.664	0.474	0	1
<i>AVOID_LOSS</i>	0.164	0.371	0	1
<i>INVALID</i>	0.132	0.339	0	1
<i>CY_LOSS</i>	0.223	0.417	0	1
<i>SIZE</i>	22.009	2.315	15.405	27.296
<i>ADJUST</i>	0.686	0.465	0	1

Source: Own observation

Since *INDUSTRY_DUMMY* acts only as a control variable for industry membership and industry membership in the population has already been described in section 4.3, its descriptive statistics is omitted for the sake of brevity. The results in Table 14 above should be read in conjunction with Figures 22 to 24 below, which present the histograms of the main variables of interest, namely, *EMPHASIS*, *AVOID_LOSS* and *INVALID*, for each disclosure score category and in total.

The first variable that is described is *EMPHASIS*. As shown in Table 14 above, in the population of 220 SENS reports, the majority (66.4%) emphasise EBITDA over IFRS earnings. As seen in Figure 22 below, this result also applies to the individual reconciliation score categories.

Figure 22: Histograms of *EMPHASIS* per disclosure score category and in total
(N = 220)



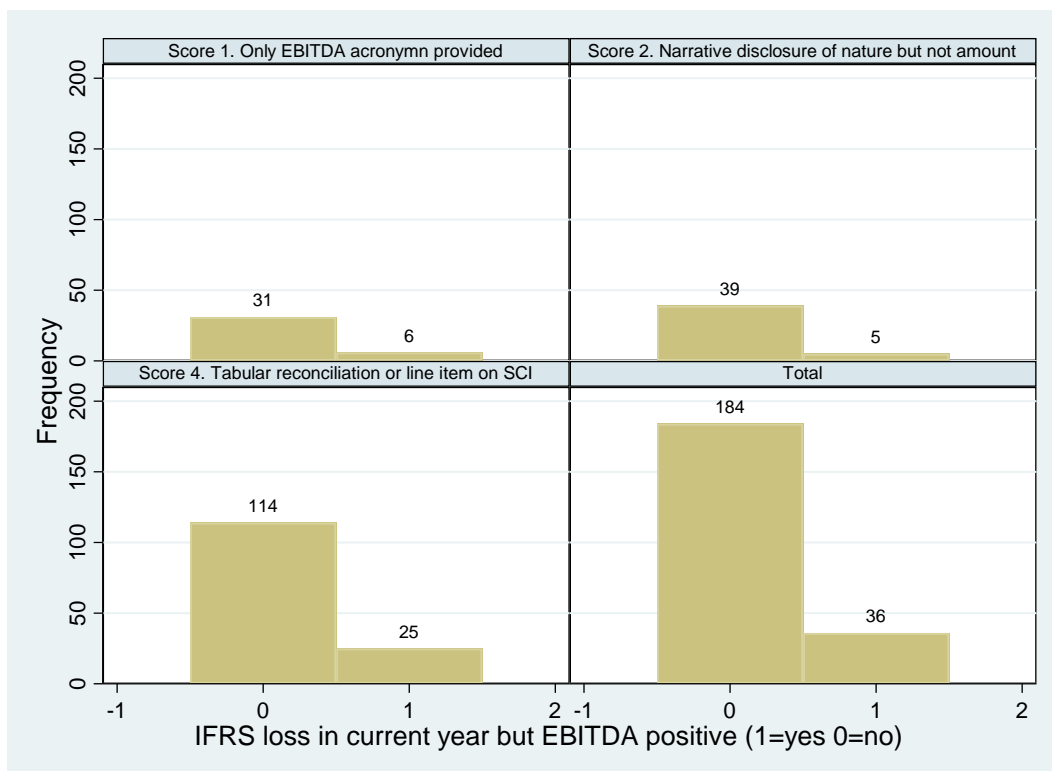
Source: Own observation

As seen in Figure 22 above, within each score category the number of SENS reports in which EBITDA is emphasised is greater than in the reports in which IFRS earnings is emphasised. The trend increases slightly between score categories one and two. With score one, 55% (21 out of the total 37 score one SENS reports) emphasised EBITDA. In contrast, in the SENS reports with a score of two, 57% (24 out of 44 score two SENS reports) emphasised EBITDA. However, when one looks at the SENS reports in which a score of four were awarded, then the proportion of reports in which EBITDA is emphasised is significantly higher at 73% (101 out of 139 score four SENS reports). On a preliminary basis these results suggest that companies that emphasise EBITDA over IFRS earnings are more likely to provide higher quality reconciling information. The Fisher's exact test, which tests

whether a statistically significant association exists between categorical variables, confirmed, at a 5% level of significance, that a statistically significant relationship exists between *EMPHASIS* and *RECONSCORE* (p-value = 0.032).

The next variable of interest is *AVOID_LOSS*. Table 14 above showed that 16.4% of the SENS reports disclosed an EBITDA measure that exceeded zero, while the company in question made an IFRS loss. Figure 23 below shows how the number of SENS reports in which the companies disclosed a positive EBITDA while the IFRS earnings was negative differed across the reconciliation score categories one, two and four.

**Figure 23: Histograms of *AVOID_LOSS* per disclosure score category and in total
(N = 220)**

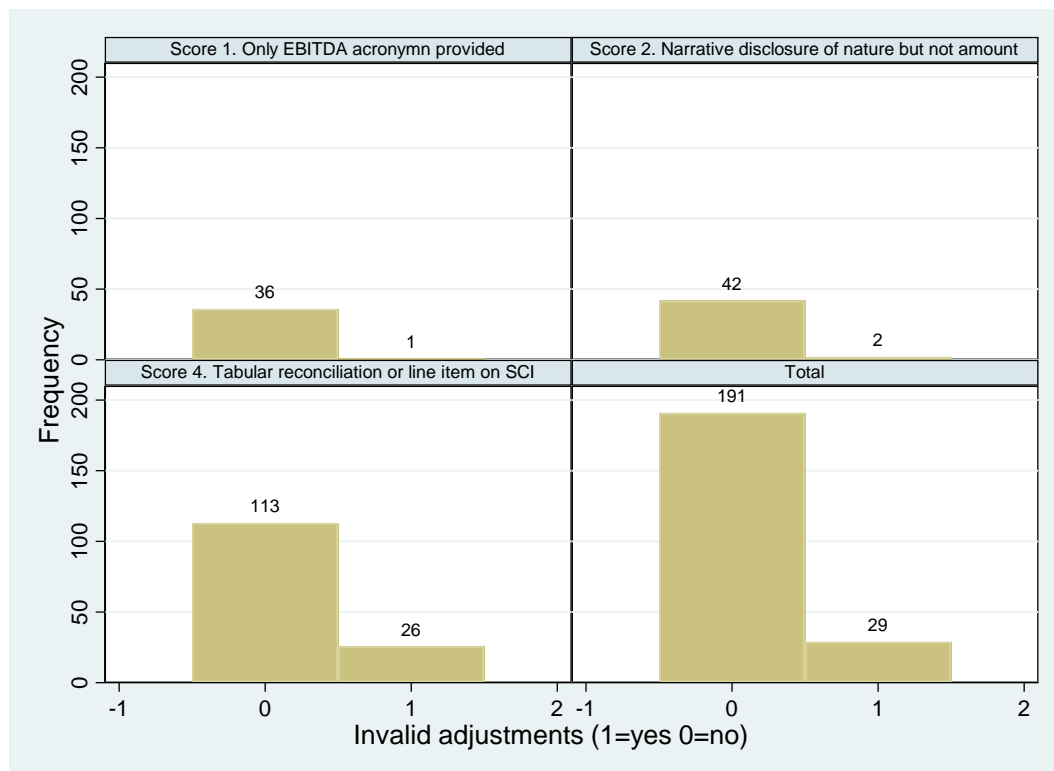


Source: Own observation

Figure 23 above shows that 18% (25 out of the total 139 score four SENS reports) of the SENS reports in which a score of four was awarded disclosed a measure of EBITDA that is positive while the company made an IFRS loss. This proportion is higher than that of the score one and score two categories, which contain 16% (six out of 37 score one reports) and 11% (five out of 44 score two reports) of reports respectively in which EBITDA reflects as a profit while IFRS earnings is a loss. The results are mixed. When the highest and lowest score categories, that is, one and four, are compared, it appears as if companies are just as likely to provide the highest quality of reconciliation when the variable *AVOID_LOSS* is present than when they provide the lowest quality of reconciliation. When score categories one and two are combined then the combined proportion of SENS reports in which the variable *AVOID_LOSS* is present is 16%. The Fisher exact test confirms these findings. With a p-value of 0.631, the Fisher exact test showed that there is no statistically significant relationship between *AVOID_LOSS* and *RECONSCORE*. However, this finding ignores the effect of *AVOID_LOSS* on *RECONSCORE* if other variables are also included, as is done in the multiple regression in section 4.4.2.

Lastly, focusing on the variable *INVALID*, Table 14 above showed that 13.2% of all SENS reports made adjustments for invalid items when calculating EBITDA. As discussed in section 3.3.3, invalid adjustments relate to items which are seen as recurring, and which should be included in a company's performance measures. Adjusting for invalid items in deriving at EBITDA is, therefore, an indication of potential opportunistic disclosure. Figure 24 below shows that 26 out of 29 SENS reports (90%) in which invalid adjustments were made appear in the disclosure score four category.

Figure 24: Histograms of *INVALID* per disclosure score category and in total
(N = 220)



Source: Own observation

The Fisher exact test confirmed, at a 1% level of significance ($p\text{-value} = 0.005$), that a statistical relationship exists between reconciliation quality and instances where invalid adjustments formed a reconciling item between EBITDA and IFRS earnings. This suggests that management's decision to make invalid adjustments and their decision relating to the quality of the reconciliation between EBITDA and IFRS earnings that they disclose, are related.

This section contained descriptive evidence of the three opportunistic variables included in the main regression in the next section, namely: *EMPHASIS*, *AVOID_LOSS* and *INVALID*.

Seen in isolation from the effect of the other variables in the regression, the results in this section suggest that companies with higher disclosure scores place more emphasis on EBITDA. Furthermore, it was not possible to identify a clear association between the reconciliation disclosure quality and instances where companies disclose positive EBITDA when IFRS earnings were negative. Lastly, the section showed that reconciliation quality and invalid adjustments are significantly associated and that the highest concentration of SENS reports in which invalid adjustments were made were to be found in the score four category. The next section will include all the variables in the main OLS regression in order to meet research objective four.

4.4.2 Results of research objective four: Determining whether EBITDA reconciliation quality is negatively associated with factors linked to opportunistic disclosure

The previous section presented descriptive statistics on the opportunistic factors associated with reconciliation quality. This section discusses the results in respect of meeting the fourth and final research objective.

The purpose of the fourth research objective is to determine whether EBITDA reconciliation quality is negatively associated with factors linked to opportunistic disclosure. This is done in order to answer the research question as stated in section 1.3. Table 15 below presents the OLS regression results of the main regression model, model 1.

Table 15: OLS results of the main regression model

	Model 1
Variables	<i>RECONSCORE</i>
<i>EMPHASIS</i>	0.384**
	(0.170)
<i>AVOID_LOSS</i>	-0.422*
	(0.245)
<i>INVALID</i>	0.336**
	(0.168)
<i>CY_LOSS</i>	0.501**
	(0.202)
<i>SIZE</i>	-0.010
	(0.046)
<i>ADJUST</i>	1.076***
	(0.193)
Constant	2.226**
	(1.054)
Industry dummies included	YES
N (company-year observations = SENS reports)	220
R-squared	0.258
F-statistic	8.26
Prob > F	0.000

Notes:

Robust standard errors in parentheses

*** = significant at 1%

** = significant at 5%

* = significant at 10%

Source: Own observation

In Table 15 above the reported standard errors shown in brackets are heteroskedasticity-robust standard errors. Robust standard errors are used in this study because the Breusch-Pagan test of homoskedasticity rejected the null hypothesis of homoscedastic errors (test statistic = 7.25, p-value = 0.007). As seen in Table 15 above, the F-statistic of 8.26 is

significant at 1% level of significance ($p\text{-value} < 0.000$), indicating that the model is valid in explaining *RECONSCORE*; that is, EBITDA reconciliation quality. The R-squared indicates that, in the population, 25.8% of the variation in EBITDA reconciliation quality may be explained by the variation in the independent variables. In view of the fact that it is not the aim of this study to develop a model that best explains EBITDA reconciliation quality but, rather, to determine the association between opportunistic factors and EBITDA reconciliation quality, the low R-squared is not of any concern.

The main variables of interest are those associated with opportunistic disclosure, namely, *EMPHASIS*, *AVOID_LOSS* and *INVALID*. The results are discussed below.

EMPHASIS:

The coefficient on *EMPHASIS* is a positive 0.384 and significant at 5% level of significance ($p\text{-value} = 0.025$). This result is, however, contrary to the research hypothesis (section 1.4) that *EMPHASIS* and *RECONSCORE* are negatively associated and, therefore, does not provide support for the earnings management theory. Nevertheless, this result is in line with the results of Zhang and Zheng (2011: 193) who also found a positive and significant relationship between reconciliation quality and instances where a company emphasised a non-GAAP earnings measure over a defined GAAP earnings measure. Therefore, the findings in both this study and that of Zhang and Zheng (2011: 193) show that companies that place higher emphasis on non-GAAP earnings when disclosing their performance also provide higher quality reconciling information between the non-GAAP and GAAP measures. A potential explanation for this finding is that management is aware that poor quality reconciling information may be interpreted as an attempt to hide opportunistic disclosure while they believe that EBITDA provides decision-useful information. As a result,

management attempts to assure the users of the SENS reports that EBITDA is not being emphasised for opportunistic purposes. They provide this assurance by providing high quality reconciliations between EBITDA and IFRS earnings. In so doing, management provide more complete information in order to enhance the perceived credibility of the information. Since existing literature suggests that users view non-GAAP earnings as more reliable when accompanied by a quantitative reconciliation to GAAP earnings (Elliott, 2006: 130), the positive association between *EMPHASIS* and *RECONSCORE* provides support for the assertion that management meets this need for decision-useful information by providing higher quality reconciliations.

AVOID_LOSS:

Table 15 above further shows that the coefficient on *AVOID_LOSS* is negative at -0.422 and significant at 10% level of significance (p-value = 0.087). This result suggests that companies that disclose positive EBITDA while their IFRS earnings is negative are more likely to disclose poorer quality reconciling information. This finding is consistent with the hypothesis that management attempts to manage the users' perceptions of the performance of the company by obscuring their intent through incomplete information. However, the statistical significance of the results is in question as the descriptive analysis discussed in section 4.4.2 found no statistically significant relationship between *AVOID_LOSS* and *RECONSCORE*. Accordingly, additional validity tests are conducted (section 4.4.3) to investigate the matter further.

In contrast to the findings above, in their US-based study Zhang and Zheng (2011: 193) found a significant positive relationship between their variables representing *AVOID_LOSS* and reconciliation quality. Zhang and Zheng's (2011: 193) sample consisted of earnings

press releases for the period 1998 to 2001, whereas the SEC's Regulation G, that required US-listed companies to provide a reconciliation between GAAP and non-GAAP earnings, when reported, became effective only in 2003 (see discussion in section 2.5.1). The disclosure of high quality reconciliations by the companies in Zhang and Zheng's (2011: 193) study was, therefore, voluntary and suggests that, in US companies, management felt the need to provide decision-useful information by presenting more complete reconciliations.

INVALID:

Table 15 above shows that the coefficient on the variable *INVALID* is significant at 5% level of significance (p-value = 0.046) and a positive 0.336. This result suggests that management provides more complete reconciling information when they adjust for invalid items in deriving the EBITDA. This finding is, however, inconsistent with the theory of earnings management and suggests instead that managements want to provide the users with decision-useful information in order to enable users to understand why the invalid adjustments were made. This also implies that management views the adjusting items as non-recurring and, therefore, as valid adjustments in providing an earnings measure that represents future performance.

The findings above are in contrast with those of Zhang and Zheng (2011: 193). Recall that the invalid adjustments in this study include adjustments for legal expenses and share-based expenses. Although Zhang and Zheng (2011: 193) did not include legal expenses as a variable in their study, they did find that adjustments for share-based expenses are negatively associated with reconciliation quality.

CY_LOSS:

In line with the expectation raised in section 3.3.3, the coefficient of *CY_LOSS* in Table 15 above is a positive 0.501 and significant at 5% level of significance (p-value = 0.014). Since poor performance may, potentially, lead to job losses, management could be incentivised to explain the poor performance through a more complete disclosure (Healy & Palepu, 2001: 421). The positive association between *CY_LOSS* and reconciliation quality supports this theory.

SIZE and ADJUST:

Finally, the coefficient on *SIZE* in Table 15 above is -0.010 and is not significant (p-value = 0.827). In contrast, whether a company makes additional adjustments when deriving EBITDA, other than interest, tax, depreciation and amortisation (ITDA), is significantly associated with reconciliation quality. The coefficient on *ADJUST* is a positive 1.076 and significant at 1% (p-value = 0.000). Although this variable represents only whether adjustments other than ITDA were made, its result is consistent with the results of Zhang and Zheng (2011: 193) who found a positive and significant relation between the number of adjustments and reconciliation quality.

This section presented the results from the main OLS regression. The next section investigates how sensitive the results are when using a more robust, averaging model. The next section also addresses validity concerns about dependence between the company-observations.

4.4.3 Sensitivity tests and validity concerns

The previous section presented the OLS results of the main regression, model 1 while this section investigates the sensitivity and validity of the results from model 1.

In order to test whether industry participation drives the results presented in Table 15 above, model 1 was performed again, but without including industry dummies. After excluding industry dummies, the inferences on all variables remained unchanged. The coefficient magnitudes and significance levels remained approximately the same while the signs of all the coefficients remained the same. This finding suggests that management's decision to provide higher or lower quality reconciliations when EBITDA is emphasised, when EBITDA is positive while IFRS earnings is negative, or when invalid adjustments are made, is not driven by industry membership.

In assessing whether statistical inferences are valid, a potential problem that should be considered is multicollinearity. Multicollinearity exists when two or more independent variables are highly correlated. On its own, multicollinearity leads to increased standard errors of coefficients, which can potentially lead to invalid inferences. A measure that is commonly used to assess the degree of multicollinearity is the variance inflation factor (VIF). A VIF of more than ten is a guideline which is generally used to indicate the existence of severe multicollinearity (Wooldridge, 2014: 86). The variance inflation factors of the variables used in model 1 in Table 15 (see the previous section) are presented in Table 16 below.

Table 16: Variance inflation factors of independent variables in the main regression

Variable	VIF
<i>EMPHASIS</i>	1.10
<i>AVOID_LOSS</i>	3.49
<i>INVALID</i>	1.13
<i>CY_LOSS</i>	3.74
<i>SIZE</i>	1.77
<i>ADJUST</i>	1.34
Mean VIF	1.67

Source: Own observation

As seen in Table 16 above, the average variance inflation factor is 1.67 while not one of the independent variables has a variance inflation factor of ten or higher. It may, thus, be concluded that multicollinearity is not a concern and that the results from model 1 presented in Table 15 are valid.

Another concern that may affect statistical inference arises from serial correlation between the error variable over time. This occurs when the observations are not independent across, for example the three-year period, thus implying that there are unobserved company-specific effects that are time invariant. In other words, certain unobserved factors that influence a company's decision to provide higher or lower quality reconciliations are present throughout the three-year period and need to be controlled for in order to ensure valid inferences. Serial correlation may lead to biased standard errors on the coefficients in the regression model. Consequently, in the presence of serial correlation, inferences will be invalid (Wooldridge, 2014: 332). The Durban-Watson statistic is a test statistic which is used to test whether errors between periods are correlated. Following the regression of model 1 in Table 15 above, a Durban-Watson statistic of 1.101 was obtained. Since 1.101 is less than the critical value of 1.52, this indicates that the error variable is serially correlated across the three-year

period (Keller & Warrack, 2003: 682) and need to be controlled for in order to obtain valid inferences from the OLS regression.

As discussed in section 3.3.5, in order to control for the serial correlation between the observations, an OLS regression was performed using average values per company. This involved calculating an average value per company over the three-year period of all the variables in model 1. By using average values per company, the time invariant company-specific effect and, therefore, also the problem of serial correlation, were removed. Unfortunately, since the data in the averaging model includes one average observation per company only, the number of observations was reduced to 86 company observations from the 220 company-year observations in model 1. Using OLS, the average reconciliation score was then regressed on the average values of the independent variables. This additional model, referred to as model 2, can be stated as follows:

$$AVE_RECONSCORE_i = \beta_0 + \beta_1 AVE_EMPHASIS_i + \beta_2 AVE_AVOID_LOSS_i + \beta_3 AVE_INVALID_ADJ_i + \beta_4 AVE_CY_LOSS_i + \beta_5 AVE_SIZE_i + \beta_6 AVE_ADJUST_i + \varepsilon$$

where: *AVE_RECONSCORE* is the average reconciliation score per company across the period 2014 to 2016. All the other variables are as explained in section 4.4.1 although the designation 'AVE' was added to each independent variable in order to distinguish them from the variables in model 1. Industry dummies were excluded from model 2 as the results referred to earlier in this section confirmed that industry membership does not affect the results. Furthermore, since the averaging process substantially decreased the population used for model 2, the addition of industry dummies posed the risk of introducing high multicollinearity. The OLS results of model 2 are presented in Table 17 below. In order to

facilitate a comparison between the OLS results from model 1 and model 2, the results of model 1 are repeated in Table 17 below.

Table 17: OLS results of robust regression model and comparison with results from main regression model

Model 1 (Main regression model)		Model 2 (Robust regression model)	
Variables	<i>RECONSCORE</i>	Variables	<i>AVE_RECONSCORE</i>
<i>EMPHASIS</i>	0.384**	<i>AVE_EMPHASIS</i>	0.481*
	(0.170)		(0.280)
<i>AVOID_LOSS</i>	-0.422*	<i>AVE_AVOID_LOSS</i>	-1.415*
	(0.245)		(0.743)
<i>INVALID</i>	0.336**	<i>AVE_INVALID_ADJ</i>	0.416
	(0.168)		(0.288)
<i>CY_LOSS</i>	0.501**	<i>AVE_CY_LOSS</i>	1.232**
	(0.202)		(0.543)
<i>SIZE</i>	-0.010	<i>AVE_SIZE</i>	-0.070
	(0.046)		(0.051)
<i>ADJUST</i>	1.076***	<i>AVE_ADJUST</i>	1.414***
	(0.193)		(0.318)
Constant	2.226**	Constant	3.210***
	(1.054)		(1.109)
N (observations)	220 company-year observations		86 company observations
R-squared	0.258		0.320
F-statistic	8.26		8.54
Prob > F	0.000		0.000

Notes:

Robust standard errors in parentheses

*** = significant at 1%

** = significant at 5%

* = significant at 10%

Source: Own observation

The results of model 2 presented in Table 17 above support all the results of model 1 presented in Table 15 while all inferences remain unchanged. In model 2 the coefficient relating to the emphasis of EBITDA is still positive and significant at the 10% significance level ($AVE_EMPHASIS = 0.481$; $p\text{-value} = 0.090$). Consistent with $AVOID_LOSS$ in model 1, the coefficient on AVE_AVOID_LOSS is a negative 1.415 and significant at the 10% significance level ($p\text{-value} = 0.060$). The coefficient on the variable relating to invalid adjustments on company level, $AVE_INVALID$, is marginally insignificant with a $p\text{-value}$ of 0.152. However, the positive sign of the coefficient of 0.416 is still consistent with the results pertaining to the invalid adjustments in model 1.

Table 17 above also shows that, in both model 1 and model 2, $AVOID_LOSS$ is statistically significant at the 10% significance level in explaining EBITDA reconciliation quality, despite initial descriptive statistics in section 4.4.2 that identified no significant association between reconciliation quality and $AVOID_LOSS$. As indicated in section 3.3.4, when the dependent variable is categorical (as in this case), rather than continuous, it may have an effect on the estimates derived from OLS. Therefore, in view of the contrasting findings on the significance of the association between the reconciliation quality and $AVOID_LOSS$, and to test the robustness of the results from the OLS estimations, a log-linear estimation method was also used to test the validity of the results presented in Table 17 above. The log-linear estimation method used was the ordered logit method which is appropriate when the dependent variable is an ordered categorical variable (UCLA Institute of Digital Research and Education, 2010). The Wald statistic for overall validity of the model was 60.93 and significant at 1% ($p\text{-value} = 0.000$), thus indicating that the ordered logit model was valid. The results from the ordered logit model confirmed the negative sign of the coefficient on $AVOID_LOSS$, as reported in models 1 and 2 in Table 17, although the coefficient was found to be only weakly statistically significant at 12%. Furthermore, the results from the ordered

logit model confirmed the positive sign of the coefficient of *CY_LOSS* as significant at 10% level of significance. This result confirms that of the *CY_LOSS* in model 1 in Table 17. Lastly, the untabulated results from the ordered logit model confirmed that the signs and significance of all the other variables presented in Table 17 remained unchanged.

The last validity check involved addressing the potential measurement error in the dependent variable, *RECONSCORE*. Although an independent person also randomly verified the data collected (see section 3.4), model 2 was also tested for a potential measurement error in the *RECONSCORE*. This was done by combining the reconciliation scores one and two in one category as the risk of a measurement error between those two was deemed to be higher than that of the score four category. Recall that no instances were identified where a score of three were awarded. The risk of incorrectly awarding a score of four was considered to be significantly lower as the EBITDA presented in the tabular reconciliations or where the EBITDA appeared in the SCI were much easier to detect in the SENS report. Therefore, by combining scores one and two in one category, the risk of incorrect scoring between the scores one and two could be dismissed if the results remained unchanged. Model 2 was repeated with the dependent variable a binary score of one if a reconciliation score of four was awarded and zero if either a reconciliation score of one or two was awarded. The untabulated results confirmed that all the inferences from model 1 remained unchanged and therefore provide additional assurance that the reconciliation scores were correctly allocated.

4.4.4 Conclusion on research objectives three and four

This section discussed both research objectives three and four. Research objective three involved identifying factors associated with opportunistic disclosure while research objective

four involved determining whether the EBITDA reconciliation quality and the factors identified from research objective three are negatively associated. The section commenced by providing descriptive evidence relating to research objective three and then presented the results of the main regression relating to research objective four. The OLS results showed that the explanatory variables representing emphasis of EBITDA over IFRS earnings and the adjustment of invalid items in calculating EBITDA was positively associated with reconciliation quality. This finding did therefore not support the research hypothesis. However, consistent with the research hypothesis the OLS results showed that the explanatory variable representing the avoidance of losses was negatively associated with reconciliation quality. The section also presented the results from the additional statistical analyses that tested the sensitivity and the validity of results from the main regression. These additional tests supported the results from the main regression model.

4.5 OVERALL SUMMARY OF CHAPTER

This chapter presented the research findings on all four of the research objectives set in Chapter 1, section 1.5. Following the introduction in section 4.1, section 4.2 addressed research objective one by describing the nature of EBITDA reporting in the SENS reports of JSE-listed companies. Section 4.3 then assessed the quality of the reconciliations between EBITDA and IFRS earnings in the SENS reports, thereby meeting research objective two. Finally, section 4.4 presented the results in respect of meeting research objectives three and four by describing how factors associated with opportunistic disclosure were present in the population and by performing the regression analysis. The next chapter concludes the results of the study.

CHAPTER 5: CONCLUSION

5.1 INTRODUCTION

The aim of this study was to determine whether South African-listed companies are more likely to disclose lower quality reconciling information between EBITDA and IFRS earnings when factors associated with opportunistic disclosure are present. In realising this aim, the study addressed the research problem of whether the IASB and JSE should be explicit when requiring companies to disclose reconciliations between non-GAAP earnings and IFRS earnings. The aim of the study was realised by answering the research question, namely: Are companies less likely to disclose higher quality reconciliations between EBITDA and IFRS earnings when factors linked to opportunistic disclosure are present? The population used to answer the research question consisted of the SENS reports of JSE-listed companies in which they disclosed EBITDA as performance measure for the financial years ended in the period 2014 to 2016.

Both standard setters and capital market regulators recognise that non-GAAP earnings measures may provide decision-useful information to the primary users of financial reports as management is able to convey company-specific information through such non-GAAP measures. However, the problem that standard setters and regulators face is how to ensure, without placing an undue disclosure burden on companies, that management disclose non-GAAP earnings that convey decision-useful information, and not information intended to suit management's own opportunistic purposes. The disclosure of reconciliations between non-GAAP earnings and IFRS earnings has been proposed as an appropriate means by which complete information may be provided to users of financial reports, thereby limiting the potential for management bias. In addition, the quality of the reconciliations also plays an important role in enhancing the quality and transparency of the link between IFRS earnings

and non-GAAP earnings. In South Africa the JSE relies on the Conceptual Framework and IFRS disclosure requirements to ensure that companies provide complete and unbiased information. However, the Conceptual Framework, as well as existing and proposed IFRS requirements are silent on the format of reconciliations that companies should disclose in their SENS reports. In the absence of explicit disclosure requirements, it is left to the discretion of company management to decide on the extent to which they will explain the link between IFRS earnings and non-GAAP earnings, thus opening up the possibility of their disclosing poor quality reconciling information in order to obscure opportunistic intent. By answering the research question this study provided evidence that may help to resolve the problem of whether the JSE and IASB should be explicit in their disclosure requirements in relation to the format that the reconciliations between IFRS earnings and non-GAAP earnings should take.

The research question was answered by addressing the four research objectives introduced in Chapter 1, section 1.5 and set out below:

- i) To describe the nature of EBITDA disclosure in the SENS reports of JSE-listed companies.
- ii) To assess the quality of the reconciliations between EBITDA and IFRS earnings.
- iii) To identify factors that are linked to opportunistic disclosure.
- iv) To determine whether EBITDA reconciliation quality is negatively associated with factors linked to opportunistic disclosure.

The remainder of this chapter is structured as follows: Firstly, a synthesis of the empirical findings from the study is provided to illustrate how the research question was answered; secondly, the theoretical implications of the findings are discussed; thirdly, a summary of the

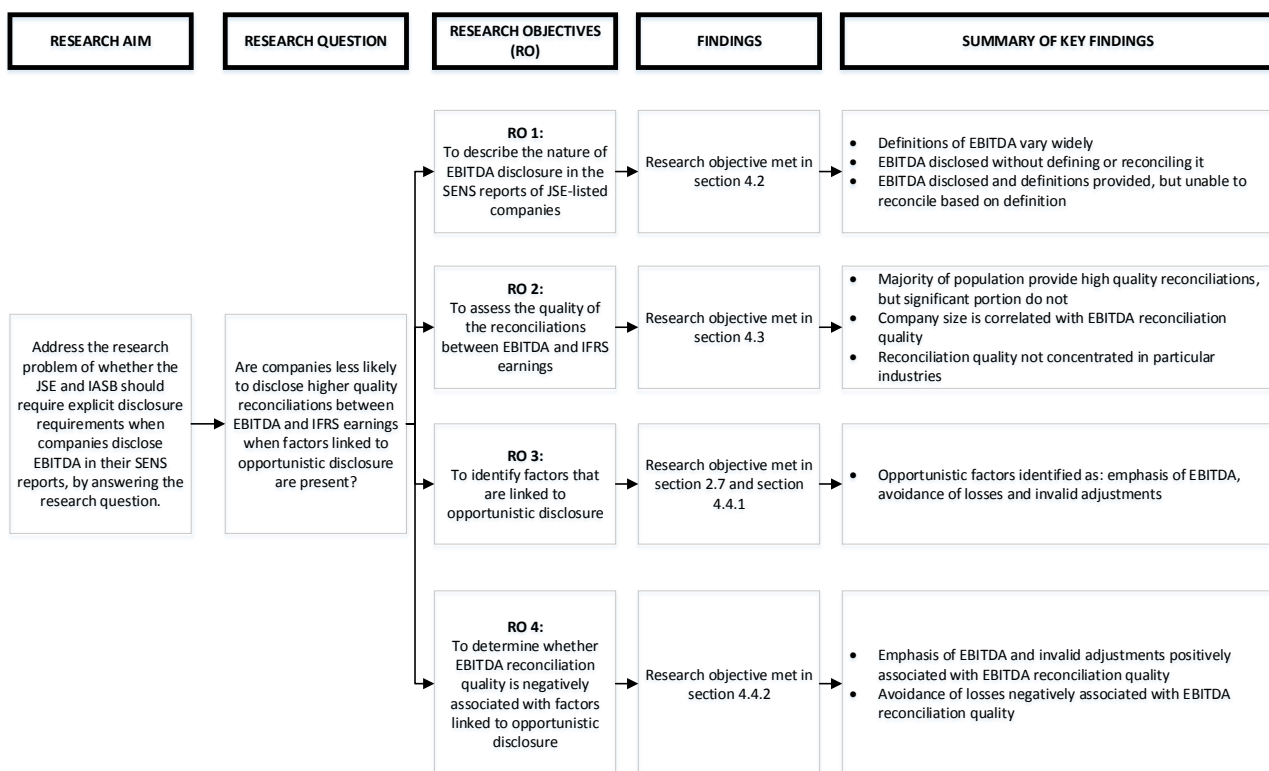
contributions of the study is presented; fourthly, limitations of the study and areas for future research are identified and, lastly, a final conclusion is provided.

5.2 EMPIRICAL FINDINGS

This section commences by finalising the link between the research aim, research question, research objectives (the link started in Chapter 1) and the study's findings (Chapter 4).

Figure 25 below links the research aim to the summary of the key findings.

Figure 25: Link between research aim and summary of key findings



Source: Own observation

Figure 25 above shows that all the research objectives were realised and that the research question was satisfactorily answered. A discussion of how the research objectives were

realised in order to answer the research question and, thus, to meet the aim of this study, is provided in the following sections.

5.2.1 Research objective one: Describing the nature of EBITDA reporting

The first research objective involved describing the nature of the EBITDA disclosure in the SENS reports of JSE-listed companies. The purpose of this objective was to determine whether EBITDA is used as a standardised measure, or whether adjustments, other than interest, tax, depreciation and amortisation, are made in deriving the EBITDA. Where additional adjustments are made, the need for reconciliations between EBITDA and IFRS earnings is highlighted. Research objective one was met in Chapter 4, section 4.2.1.

A key finding from the results presented in section 4.2.1 is that the users of South African company SENS reports should not see EBITDA as a standardised measure – in other words, as a performance measure derived from IFRS earnings by adjusting only for interest, tax, depreciation and amortisation. This finding is consistent with the findings from international studies (CFA Society United Kingdom, 2015: 10). This finding has implications for both investors and the lenders of companies. It is important that investors inspect financial reports carefully to determine the type of adjustments companies make in deriving EBITDA in order to estimate recurring future performance. Likewise, lenders that include EBITDA as a measure of debt covenants should explicitly define EBITDA to enable effective monitoring of debt covenants.

Another key finding noted in section 4.2.1 is that companies' definitions of their EBITDA measures differed widely with 50 definitions other than 'Earnings before interest, tax, depreciation and amortisation' being identified. Twenty seven of the 50 definitions related to

SENS reports that referred to EBITDA only with no indication that additional adjustments, other than interest, tax, depreciation and amortisation were made. Some stakeholders have requested the IASB to develop standardised definitions of commonly used performance measures, including EBITDA (IASB, 2017a, para. 5.18). However, the finding above casts serious doubt of whether such a goal will ever be attainable in respect of EBITDA. Instead, the finding provide support for the development of a disclosure requirement that mandates companies to disclose a detailed reconciliation between IFRS earnings and EBITDA. If this is not done by the IASB, the JSE should consider developing such a requirement so as to be in line with other international capital market regulators.

Overall, the results presented in section 4.2.1 also showed that, in the population of 220 SENS reports, 17 SENS reports (8%) disclosed an EBITDA measure that was derived from IFRS earnings by adjusting for items other than interest, tax, depreciation and amortisation, but where the SENS report provided no definition nor a reconciliation. Thus, the users of those reports were left with incomplete information in understanding the performance of the company, as conveyed through the EBITDA measure. The result further underscores the importance of requiring companies to disclose a detail reconciliation between EBITDA and IFRS earnings in order to ensure decision-useful information.

Lastly, during the data collection process it was found that, in six SENS reports, the tabular reconciliation between EBITDA and IFRS earnings did not reconcile, thus leaving an unexplained difference due to the mathematical casting error. Although not the focus of this study, this finding points to a weakness in either the quality control of the company involved or the auditor review process. Both possibilities are worrying and requires attention.

In conclusion, research objective one, namely, to describe the nature of EBITDA disclosure in the SENS reports of JSE-listed companies was met, as descriptive evidence showed that EBITDA is not used as a standardised measure, thus highlighting the need for SENS reports to include reconciliations between EBITDA and IFRS earnings. Based on the need for such reconciliations, the quality of the reconciliations disclosed in the SENS reports became the focus of the next research objective. This is discussed in the following section.

5.2.2 Research objective two: Assessing EBITDA reconciliation quality

Following upon research objective one that highlighted the need for companies to disclose reconciling information between EBITDA and IFRS earnings, the second research objective involved assessing the quality of the reconciliations between EBITDA and IFRS earnings in the SENS reports. The results in relation to meeting objective two were then used in the main regression that was used in meeting research objective four. The realisation of research objective two was discussed in Chapter 4, section 4.3.1.

Using a score sheet developed from existing literature, the SENS reports were awarded a reconciliation quality score. It was found that 63% of the population of 220 SENS reports provided a high quality reconciliation by either including EBITDA as a line item on the SCI or by providing a tabular reconciliation to IFRS earnings. Twenty percent of the SENS reports described the nature, but not the amounts, of the adjusting items between EBITDA and IFRS earnings and, lastly, 17% of the SENS reports disclosed only the term EBITDA without any further explanation of adjusting items, either narratively or by way of a tabular reconciliation. Accordingly, although the majority of SENS reports disclosed a high quality reconciliation between EBITDA and IFRS earnings, a key finding is that a significant 17% did not do so. In the light of the findings from research objective one that EBITDA cannot be

seen as a standardised measure, the key finding that 17% had provided no reconciliation should be concerning for both the users of SENS reports, as well as the JSE who is responsible for ensuring that listed companies provide decision-useful information.

Although not the focus of this study, it was found that various companies, that included EBITDA as a line item in their SCIs, presented the expenses in their SCIs by the function of those expenses, and not by the nature of expenses. Although the inclusion of EBITDA as a line item in the SCI clearly reconciles EBITDA to IFRS earnings, the IASB is of the view that presenting EBITDA as a line item on the SCI, while expenses are presented based on their function and not on their nature, does not comply with IFRS disclosure requirements (IASB, 2017a, para. 5.21). This supplementary finding should therefore prompt either the JSE or IASB to effectively communicate their views to ensure that companies comply with IFRS standards. A possible solution to this problem would be if companies were to exclude EBITDA as a line item in the SCI and, instead, provide a separate note containing a reconciliation between EBITDA and IFRS earnings.

The descriptive analysis further showed that company size is positively correlated with the quality of the reconciliation disclosure. This key finding is consistent with those of prior studies and reaffirms the theory that larger companies provide more detailed disclosure (Raffournier, 1995: 262).

The results show that the mean EBITDA reconciliation scores per industry were approximately the same across all industries. Accordingly, it does not appear as if industry membership plays a role in determining the quality of the reconciliations between EBITDA

and IFRS earnings. This result is consistent with findings in prior studies (Zhang & Zheng, 2011: 191).

In conclusion, research objective two, namely, to assess the quality of the reconciliations between EBITDA and IFRS earnings in the SENS reports, was realised by awarding reconciliation quality scores to the population of 220 SENS reports. This finding was used in meeting research objective four, discussed in section 5.2.4 below. The next section discusses the research findings in relation to research objective three.

5.2.3 Research objective three: Identifying factors linked to opportunistic disclosure

The third research objective involved identifying factors that are linked to opportunistic disclosure. The results, together with those of research objective two, as discussed above, were then used to meet research objective four. Research objective three was met in Chapter 2, section 2.7 and Chapter 4, section 4.4.1.

The literature review in section 2.7 was used to identify factors associated with reconciliation quality. These factors included those associated with opportunistic disclosure as well as other factors affecting reconciliation quality. The literature review identified the following factors associated with opportunistic disclosure:

- Greater emphasis is placed on non-GAAP earnings than on GAAP earnings.
- Non-GAAP earnings beat a strategic benchmark, whereas GAAP earnings do not.
- Adjustments for recurring items are made when calculating non-GAAP earnings.

Section 4.4.1 described the nature of the opportunistic factors identified in the population of 220 SENS reports as pertaining to each of the reconciliation quality scores. Descriptive evidence showed that companies that emphasised EBITDA also provided higher quality EBITDA reconciliations. This finding suggests that companies wish to enhance the credibility of EBITDA by clearly explaining how it is calculated. However, the data collected (data collection process discussed in Chapter 3, section 3.4.1) revealed that 20 SENS reports out of the 220 (9%) reconciled EBITDA to operating profit/loss. Since operating profit/loss is also undefined, a key finding was that the extent to which those SENS reports succeed in providing a clear understanding of how EBITDA is calculated is questionable. This is also the reason the United States Security and Exchange Commission requires US-listed companies to reconcile EBITDA to net profit/loss and not to operating profit/loss (SEC, 2018). Should the JSE decide to develop disclosure requirements pertaining to non-GAAP earnings disclosure, the existing US requirements should be heeded.

Section 4.4.1 further showed that, where companies make adjustments for recurring items, seen as invalid adjustments in providing an earnings measure of persistent earnings, those companies disclosed lower quality EBITDA reconciliations. This key finding provided preliminary evidence suggesting that management attempts to manage users' perceptions of company performance by providing lower quality reconciliations in order to conceal from the users the invalid adjustments made in deriving the EBITDA.

Finally, beating the earnings benchmark of not disclosing a loss, that is, disclosing positive EBITDA where the IFRS earnings are negative, was found not to be statistically significant in explaining reconciliation quality. Since this finding related only to the univariate analysis between the EBITDA reconciliation score and the variable *AVOID_LOSS*, it is possible that

the variable may still have an impact on the multiple regression results that were included in the main regression – discussed in section 5.2.4 below.

In conclusion, research objective three, namely, to identify factors that are linked to opportunistic disclosure was realised by identifying such factors through a literature review and by describing the occurrence of those factors in the population of 220 SENS reports used in this study. The next section concludes the findings in relation to research objective four.

5.2.4 Research objective four: Determining whether EBITDA reconciliation quality is negatively associated with factors linked to opportunistic disclosure

The fourth and final research objective involved determining whether EBITDA reconciliation quality is negatively associated with factors linked to opportunistic disclosure. The findings from both research objectives two and three were used in meeting research objective four. The final objective then enabled the researcher to answer the research question, namely: Are companies less likely to disclose higher quality reconciliations between EBITDA and IFRS earnings when factors linked to opportunistic disclosure are present? Based on earnings management theory and evidence from prior studies conducted in South Africa of potential opportunistic disclosure, the research hypothesis stated in alternative form is as follows: EBITDA reconciliation quality is negatively associated with factors that are associated with opportunistic disclosure. The fourth research objective was met in Chapter 4, section 4.4.2.

An OLS estimation method was used to regress the EBITDA disclosure score on factors associated with opportunistic disclosure and other control variables. The results presented in section 4.4.2 showed that two of the three factors associated with opportunistic disclosure,

namely, the emphasis of EBITDA and the adjustment of invalid items, were significant and positively associated with the EBITDA reconciliation quality. Accordingly, these results do not support the research hypothesis and, instead, a key finding is that in the presence of these two factors that are linked to opportunistic disclosure the results are consistent with the theory of decision-usefulness in that management provides users with more complete information in the form of high quality reconciliations. In so doing, management also enhances the credibility of EBITDA.

In contrast to the finding above, instances in which the SENS reports disclosed EBITDA that were positive while IFRS earnings were negative, was found to be negatively associated with EBITDA reconciliation quality. This key finding supports the research hypothesis and suggests that, when management attempts to influence the users' perceptions of company performance by disclosing positive EBITDA while IFRS earnings is a loss, management also attempts to obscure such intent by not providing a complete reconciliation between EBITDA and IFRS earnings. However, the finding above should be read with care as initial descriptive statistics did not fully support the statistically significant association between EBITDA reconciliation quality and the variable *AVOID_LOSS*, as found in the main regression analysis.

The validity of the results above was tested by performing additional regression analyses. Firstly, addressing the concern of serial correlation, an OLS regression was performed on an averaging model derived from the main regression model. The adjusted model used average scores per company over the three-year period, thereby reducing the observations from company-year observations to company observations. This method was robust for the serial correlation detected in the main regression above. All the inferences remained unchanged. Secondly, a log-linear ordered logit estimation method was used to confirm the

results from the main regression. In contrast to the results of the main regression, the results from the ordered logit estimation method found the variable *AVOID_LOSS* to be only weakly statistically significant at a 12% level of significance, although still negatively associated with the EBITDA reconciliation quality as found in the main regression model. All other results from the ordered logit model supported the results in the main OLS regression.

In conclusion, research objective four, namely, to determine whether EBITDA reconciliation quality is negatively associated with factors linked to opportunistic disclosure, was met by regressing the EBITDA reconciliation quality on factors associated with opportunistic disclosure. The results indicated that different opportunistic factors have different impacts on reconciliation quality.

5.2.5 Conclusion on empirical findings

The findings from research objective four provide mixed support for the research hypothesis and suggest that not only the earnings management theory explains the direction of the statistical association between the EBITDA reconciliation quality and the factors associated with opportunistic factors but also the theory of decision-usefulness. Furthermore, the results supporting the earnings management theory are weaker than those supporting decision-usefulness. This is discussed in the next section. Nevertheless, the research question was answered, although with a qualification: Companies are less likely to disclose higher quality reconciliations between EBITDA and IFRS earnings when they disclose positive EBITDA while the IFRS earnings is negative, but not when they emphasise EBITDA nor when they adjust for items seen as invalid adjustments.

By answering the research question through the realisation of the four research objectives above, the research aim was achieved with the study concluding that, although poor quality

reconciliations do not appear to be the result of earnings management, there is a need for the IASB and JSE to be explicit about the format of the reconciliations between EBITDA and IFRS earnings.

5.3 THEORETICAL IMPLICATIONS

The findings from the study suggest that factors associated with opportunistic disclosure affect management's decision about the quality of the reconciliations they disclose in SENS reports. In contrast to the research hypothesis, not only the earnings management theory applies in explaining the association between EBITDA reconciliation quality and factors associated with opportunistic disclosure, but so does the theory of decision-usefulness.

5.4 SUMMARY OF CONTRIBUTIONS

It is likely that non-GAAP earnings will remain an important disclosure vehicle which management may use to furnish users with their superior inside knowledge of a company's expected future performance. However, this also leaves open an opportunity for misuse of non-GAAP earnings disclosure for opportunistic purposes. This study may be said to contribute to the existing body of knowledge on voluntary disclosure by determining whether, and how, factors linked to opportunistic disclosure are associated with EBITDA reconciliation quality. As far as the researcher is aware this study is the first study to do so.

The findings of this study are timely as the IASB is busy with a disclosure initiative in which it is considering whether companies should be required to provide reconciliations between non-GAAP earnings and IFRS earnings in financial reports outside of financial statements. This study highlights the importance of such a requirement by showing that significant

diversity exist in the way South African listed companies measure and disclose EBITDA in their SENS reports. Since JSE-listed companies had only to apply the principles in the Conceptual Framework to guide them in providing decision-useful information pertaining to EBITDA, the diversity in EBITDA disclosure shows that the IASB's goal of maintaining principle, rather than rule-based accounting standards risks decreasing the decision-usefulness of accounting disclosure.

The findings of this study should also be of interest to the JSE. In its capacity as a capital market regulator in South Africa, the JSE relies heavily on the IASB's Conceptual Framework and IFRS standards to ensure that JSE-listed companies provide decision-useful information. The diversity in EBITDA disclosure by South African companies should be of concern to the JSE, since it is responsible for policy decisions governing the disclosure quality pertaining to JSE-listed companies.

5.5 LIMITATIONS AND AREAS FOR FUTURE RESEARCH

This study relied heavily on the work of Zhang and Zheng (2011) to develop the reconciliation score sheet that was used to measure the quality of the EBITDA reconciliations disclosed in the SENS reports, as well as to identify factors associated with reconciliation quality. To the researcher's knowledge, the study by Zhang and Zheng (2011) is the only study that has developed a deterministic model of the reconciliation quality between non-GAAP earnings and GAAP earnings, and also the only study that has used a score sheet that met the requirements of this study.

A further limitation was that the opportunistic factor, namely, whether companies disclose non-GAAP earnings that meet or beat analyst forecasts, where GAAP earnings do not, was

not included in the regression analysis due to the lack of availability of analyst forecast data on all the companies in the population. Accordingly, the effect of this factor on the EBITDA reconciliation quality was left unexplored, thus offering the opportunity for future studies to explore this issue further by focusing only on companies for which this data is available.

Earnings variability, which is one proxy for value relevance that could have an effect on EBITDA reconciliation quality, was excluded from the study due to a lack of data for all company-years. Thus, future studies could explore its effect by using a sample for which the data is available.

This study used the decision-usefulness theory and earnings management theory to explain the results from the regression analysis in order to recommend regulatory intervention in reducing agency conflicts and enhancing decision-usefulness. Future research might investigate how the use of optimal contracting between management and stakeholders, rather than regulation, affect the reconciliation quality decision.

Lastly, this study focused on EBITDA, which is only one type of non-GAAP earnings measure. However, more South African studies are needed to provide empirical evidence as to whether voluntary disclosed non-GAAP earnings are disclosed either for informational or for opportunistic purposes. In addition, assuming it is disclosed for informational purposes, the question arises as to whether non-GAAP earnings provide the users of South African financial reports with better decision-useful information as compared to IFRS earnings. There is some evidence about the value relevance of mandatory disclosed headline earnings, for example, Venter, Emanuel and Cahan (2014) found evidence that support the value relevance of headline earnings in the annual financial statements of JSE-

listed companies for the period 2002 to 2009, but studies on voluntary disclosed non-GAAP earnings in a South African context are lacking.

5.6 CONCLUSION

The aim of this study was to determine whether South African listed companies are more likely to disclose lower quality reconciling information between EBITDA and IFRS earnings when factors associated with opportunistic disclosure are present. The study showed that the factors associated with opportunistic disclosure do affect the quality of EBITDA reconciliations but are not necessarily associated with lower quality reconciliations. However, the study also revealed that users face the problem that companies are able to define EBITDA as they see fit, without providing a complete reconciliation to their IFRS earnings. It is envisaged that both the JSE and IASB will take note of the findings of the study in order to improve the decision-usefulness of SENS reports in particular, and financial reporting in general.

References

- Advanced Health Limited. 2015. *SENS report - Provisional summary audited consolidated financial statements for the year ended 30 June 2015*. Johannesburg: IRESS Expert.
- ADvTECH Limited. 2016. *SENS report - Provisional audited results for the year ended 31 December 2015*. Johannesburg: IRESS Expert.
- Allee, K.D., Bhattacharya, N., Black, E.L. & Christensen, T.E. 2007. Pro forma disclosure and investor sophistication: External validation of experimental evidence using archival data. *Accounting, Organizations and Society*. 32(3):201–222.
- AngloGold Ashanti Limited. 2017. *SENS report - Report for the six months and year ended 31 December 2016 and declaration of Dividend No. 118*. Johannesburg: IRESS Expert.
- Ansys Limited. 2016. *SENS report - Reviewed provisional condensed consolidated financial statements for the period ended 31 March 2016*. Johannesburg: IRESS Expert.
- Aubert, F. & Grudnitski, G. 2014. The role of reconciliation quality in limiting mispricing of non-GAAP earnings announcements by EURO STOXX firms. *Advances in Accounting*. 30(1):154–167.
- Australian Securities and Investments Commission (ASIC). 2011. *Regulatory Guide 230 Disclosing non-IFRS financial information*. [Online], Available: <http://asic.gov.au/regulatory-resources/find-a-document/regulatory-guides/rg-230-disclosing-non-ifs-financial-information/> [2017, June 09].
- Barth, M.E., Beaver, W.H. & Landsman, W.R. 2001. The relevance of value relevance literature for financial accounting standard setting: another view. *Journal of Accounting and Economics*. 31(1):77–104.
- Barth, M.E. 2008. Global financial reporting: Implications for U.S. academics. *Accounting Review*. 83(5):1159–1179.
- Barth, M.E., Gow, I.D. & Taylor, D.J. 2012. Why do pro forma and Street earnings not reflect changes in GAAP? Evidence from SFAS 123R. *Review of Accounting Studies*. 17(3):526–562.
- Beyer, A., Cohen, D.A., Lys, T.Z. & Walther, B.R. 2010. The financial reporting environment: Review of the recent literature. *Journal of Accounting and Economics*. 50(2–3):296–343.
- Bhattacharya, N., Black, E.L., Christensen, T.E. & Larson, C.R. 2003. Assessing the relative informativeness and permanence of pro forma earnings and GAAP operating earnings. *Journal of Accounting and Economics*. 36(1–3 SPEC. ISS.):285–319.
- Bhattacharya, N., Black, E.L., Christensen, T.E. & Mergenthaler, R.D. 2004. Empirical Evidence on Recent Trends in Pro Forma Reporting. *Accounting Horizons*. 18(1):27–43.
- Bisman, J. 2010. Postpositivism and Accounting Research: A (Personal) Primer on Critical Realism. *Australasian Accounting Business & Finance Journal*. 4(4):3–25.
- Black, D.E. & Christensen, T.E. 2009. US managers' use of "pro forma" adjustments to meet strategic earnings targets. *Journal of Business Finance and Accounting*. 36(3–4):297–326.
- Black, D.E., Christensen, T.E., Ciesielski, J.T. & Whipple, B.C. 2017. *Non-GAAP Reporting: Evidence from Academia and Current Practice*. [Online], Available:

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2259379 [2017, July 05].

Black, E.L., Christensen, T.E., Joo, T.T. & Schmardebeck, R. 2014. *The Relation between earnings management and pro forma reporting*. [Online], Available: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2259379 [2017, July 21].

Bradshaw, M.T. & Sloan, R.G. 2002. GAAP versus The Street: An empirical assessment of two alternative definitions of earnings. *Journal of Accounting Research*. 40(1):41–66.

Cascino, S., Clatworthy, M., Osma, B.G., Gassen, J., Imam, S. & Jeanjean, T. 2016. *Professional investors and the decision usefulness of financial reporting*. ICAS. [Online], Available: <https://www.icas.com/technical-resources/professional-investors-and-the-decision-usefulness-of-financial-reporting> [2017, April 10].

CFA Society United Kingdom. 2015. *Non-IFRS earnings and alternative performance measures: Ensuring a level playing field*. London. [Online], Available: https://secure.cfauk.org/assets/1345/Non_IFRS_Earnings_and_Alternative_Performance_Measures___FINAL_web.pdf [2017, June 27].

Coulton, J., Ribeiro, A., Shan, Y. & Taylor, S. 2016. *The rise and rise of non-GAAP disclosure: a survey of Australian practice and its implications*. New South Wales: Chartered Accountants Australia and New Zealand and Center for International Finance and Regulation. [Online], Available: <https://www.charteredaccountantsanz.com/-/media/d5177569324747908714e5441ab06665.ashx> [2017, March 22].

Dichev, I., Graham, J., Harvey, C.R. & Rajgopal, S. 2013. Earnings quality: Evidence from the field. *Journal of Accounting and Economics*. 56(2):1–33.

Distribution and Warehousing Limited. 2016. *SENS report - Audited summary consolidated financial results for the year ended 31 March 2016*. IRESS Expert.

Doyle, J.T., Jennings, J.N. & Soliman, M.T. 2013. Do managers define non-GAAP earnings to meet or beat analyst forecasts? *Journal of Accounting and Economics*. 56(1):40–56.

Elliott, W.B. 2006. Are investors influenced by pro forma emphasis and reconciliations in earnings announcements? *Accounting Review*. 81(1):113–133.

Entwistle, G.M., Feltham, G.D. & Mbagwu, C. 2005. The voluntary disclosure of pro forma earnings: a U.S.-Canada comparison. *Journal of International Accounting Research*. 4(2):1–23.

Entwistle, G.M., Feltham, G.D. & Mbagwu, C. 2010. The value relevance of alternative earnings measures: A comparison of pro forma, GAAP, and I/B/E/S earnings. *Journal of Accounting, Auditing & Finance*. 25(April):288.

European Securities and Markets Authority (ESMA). 2015. *ESMA guidelines on alternative performance measures*. [Online], Available: <https://www.esma.europa.eu/search/site/apm> [2017, June 06].

Fields, T.D., Lys, T.Z. & Vincent, L. 2001. Empirical research on accounting choice. *Journal of Accounting and Economics*. 31(1–3):255–307.

Glencore Plc. 2017. *SENS report - GLN - Preliminary results 2016*. Johannesburg: IRESS Expert.

Grand Parade Investment Limited. 2016. *SENS report - Abridged audited financial statements and notice of annual general meeting*. Johannesburg: IRESS Expert.

Healy, P.M. & Palepu, K.G. 2001. Information asymmetry, corporate disclosure, and the capital markets: A review of the empirical disclosure literature. *Journal of Accounting*

and *Economics*. 31(1–3):405–440.

- Hitz, J.-M. 2010. Press release disclosure of 'pro forma' earnings metrics by large German corporations – empirical evidence and regulatory recommendations. *Accounting in Europe*. 7(1):63–86.
- Howard, M. 2016. Nature and misuse of non-mandatory non-GAAP (adjusted) earnings by JSE-listed firms. Unpublished master's thesis. Johannesburg: University of the Witwatersrand.
- International Accounting Standards Board (IASB). 2016. *Staff paper 21B November 2016: Primary Financial Statements - Use of performance measures*. [Online], Available: <https://www.ifrs.org/projects/work-plan/primary-financial-statements/#meetings> [2017, April 10].
- International Accounting Standards Board (IASB). 2017a. *Discussion paper DP/2017/1: Disclosure initiative - Principles of disclosure*. [Online], Available: <http://www.ifrs.org/Current-Projects/IASB-Projects/Disclosure-Initiative/Principles-of-Disclosure/Pages/Home.aspx> [2017, April 03].
- International Accounting Standards Board (IASB). 2017b. *Snapshot: Disclosure Initiative - Principles of disclosure*. [Online], Available: <http://www.ifrs.org/Current-Projects/IASB-Projects/Disclosure-Initiative/Principles-of-Disclosure/Documents/Principles-of-Disclosure-Snapshot-2017.pdf> [2017, April 03].
- International Accounting Standards Board (IASB). 2017c. *IFRS 15 - Revenue from contracts with customers*. London: IFRS Foundation.
- International Accounting Standards Board (IASB). 2017d. *IAS 1 - Presentation of financial statements*. London: IFRS Foundation.
- International Accounting Standards Board (IASB). 2017e. *IFRS 5 - Non-current assets held for sale and discontinued operations*. London: IFRS Foundation.
- International Accounting Standards Board (IASB). 2017f. *IAS 33 - Earnings per share*. London: IFRS Foundation.
- International Accounting Standards Board (IASB). 2017g. *IAS 12 - Income taxes*. London: IFRS Foundation.
- International Accounting Standards Board (IASB). 2017h. *IFRS 8 - Operating Segments*. London: IFRS Foundation.
- International Accounting Standards Board (IASB). 2017i. *Preface to International Financial Reporting Standards*. London: IFRS Foundation.
- International Accounting Standards Board (IASB). 2017j. *Staff paper 21A March 2017: Primary financial statements - Earnings before interest and tax (EBIT)*. [Online], Available: <http://www.ifrs.org/Meetings/MeetingDocs/IASB/2017/March/AP21A-PFS.pdf> [2017, April 10].
- International Accounting Standards Board (IASB). 2018a. *Conceptual Framework for Financial Reporting*. [Online], Available: <http://eifrs.ifrs.org/eifrs/Menu?ref=29cb9fe&token=Mzc4OTY5NzA%3D> [2018, August 10].
- International Accounting Standards Board (IASB). 2018b. *Staff paper 11A June 2018: Disclosure initiative: Principles of disclosure - Better communication in financial reporting projects*. [Online], Available: <https://www.ifrs.org/projects/work-plan/principles-of-disclosure/> [2018, September 05].

- International Accounting Standards Board (IASB). 2018c. *Primary financial statements: Project summary*. [Online], Available: <https://www.ifrs.org/projects/work-plan/primary-financial-statements/#meetings> [2018, September 05].
- Investec Plc. 2016. *SENS report - Unaudited combined consolidated financial results for the year ended 31 March 2016*. Johannesburg: IRESS Expert.
- Isidro, H. & Marques, A. 2013. The effects of compensation and board quality on non-GAAP disclosures in Europe. *International Journal of Accounting*. 48(3):289–317.
- Jefferis, K. & Smith, G. 2005. The changing efficiency of African stock markets. *South African Journal of Economics*. 73(1):54–67.
- Johannesburg Stock Exchange Limited (JSE). 2016. *Market Announcements*. [Online], Available: <https://www.jse.co.za/services/market-data/market-announcements> [2017, June 06].
- Johannesburg Stock Exchange Limited (JSE). 2017a. *JSE Limited listings requirements*. [Online], Available: <http://www.jse.co.za/content/JSERulesPoliciesandRegulationItems/JSERequirements.pdf> [2018, September 04].
- Johannesburg Stock Exchange Limited (JSE). 2017b. *JSE article: Premier Food and Fishing lists*. [Online], Available: <https://www.jse.co.za/articles/premier-food-and-fishing-lists> [2018, August 09].
- Johannesburg Stock Exchange Limited (JSE). 2018. JSE industry classifications, E-mail to author [Online], 3 Apr. Available E-mail: info@jse.co.za.
- Keller, G. & Warrack, B. 2003. *Statistics for management and economics*. 6th ed. London: Thomson Learning.
- Lamprecht, C. 2016. A financial reporting framework for South African listed companies under business rescue. Unpublished doctoral dissertation. Bloemfontein: University of the Free State.
- Lang, M. & Lundholm, R. 1993. Cross-sectional determinants of analyst ratings of corporate disclosures. *Journal of Accounting Research*. 31(2):246–271.
- Lev, B. & Zarowin, P. 1999. The boundaries of financial reporting and how to extend them. *Journal of Accounting Research*. 37(2):353–385.
- Lougee, B.A. & Marquardt, C.A. 2004. Earnings informatives and strategic disclosure: An empirical examination of “pro forma” earnings. *Accounting Review*. 79(3):769–795.
- Malone, L., Tarca, A. & Wee, M. 2016. IFRS non-GAAP earnings disclosures and fair value measurement. *Accounting and Finance*. 56(1):59–97.
- Marques, A. 2006. SEC interventions and the frequency and usefulness of non-GAAP financial measures. *Review of Accounting Studies*. 11(4):549–574.
- Marques, A. 2010. Disclosure strategies among S&P 500 firms: Evidence on the disclosure of non-GAAP financial measures and financial statements in earnings press releases. *British Accounting Review*. 42(2):119–131.
- Marques, A. 2017. Non-GAAP earnings: International overview and suggestions for future research. *Meditari Accountancy Research*. 25(3):318–335.
- Mouton, J. 2001. *How to succeed in your master's and doctoral studies: A South African guide and resource book*. 1st ed. Pretoria: Van Schaik Publishers.

- Mouton, J. & Marais, H.C. 1994. *Basic concepts in the methodology of the social sciences*. Revised ed. J. Mouon (ed.). Pretoria: HSRC Publishers.
- OED Online. 2018a. “*research, n.1*”. Oxford University Press. [Online], Available: www.oed.com/view/Entry/137329 [2018, June 21].
- OED Online. 2018b. “*paradigm, n.*”. Oxford University Press. [Online], Available: <http://www.oed.com/view/Entry/137329> [2018, June 21].
- Omnia Holdings Limited. 2015. *SENS report - Audited results for the year ended 31 March 2015*. Johannesburg: IRESS Expert.
- Papa, V.T., Peters, S.J. & Schacht, K. 2016. *Investor uses, expectations, and concerns on non-GAAP financial measures*. CFA Institute. [Online], Available: <https://www.cfapubs.org/doi/pdf/10.2469/ccb.v2016.n11.1> [2017, April 10].
- PWC. 2014. *Corporate performance: What do investors want to know? Reporting adjusted performance measures*. [Online], Available: http://www.pwc.com/en_GX/gx/audit-services/corporate-reporting/publications/investor-view/assets/pwc-investor-survey-ir-september2014.pdf [2016, June 14].
- Raffournier, B. 1995. The determinants of voluntary financial disclosure by Swiss listed companies. *European Accounting Review*. 4(2):261–280.
- Rainsbury, L., Hart, C. & Buranavityawut, N. 2015. GAAP-adjusted earnings disclosures by New Zealand companies. *Pacific Accounting Review*. 27(3):329–352.
- RCL Food Limited. 2015. *SENS report - Group financial results for the 12 months ended 30 June 2015 and cash dividend declaration*. Johannesburg: IRESS Expert.
- Riahi-Belkaoui, A. 2012. *Accounting theory*. 5th ed. Hampshire: Cengage Learning EMEA.
- Schrand, C.M. & Walther, B.R. 2000. Strategic benchmarks in earnings announcements: The selective disclosure of prior-period earnings components. *Accounting Review*. 75(2):151–177.
- Searcy, D.L. & Mentzer, J.T. 2003. A framework for conducting and evaluating research. *Journal of Accounting Literature*. 22:130–167.
- Securities and Exchange Commission (SEC). 2003. *Final Rule : Conditions for Use of Non-GAAP Financial Measures*. [Online], Available: <https://www.sec.gov/rules/final/33-8176.htm> [2017, June 05].
- Securities and Exchange Commission (SEC). 2018. *SEC.gov - Compliance and Disclosure Interpretations: Non-GAAP Financial Measures*. [Online], Available: <https://www.sec.gov/divisions/corpfin/guidance/nongaapinterp.htm> [2018, June 22].
- Sharenet. 2018. *Sharenet - JSE Full Names and Codes*. [Online], Available: <http://www.sharenet.co.za/free/jsenames.phtml?scheme=default> [2018, June 20].
- SJR. 2018. *Scimago Institutions Rankings*. [Online], Available: <https://www.scimagojr.com/journalsearch.php?q=29838&tip=sid&clean=0> [2018, June 05].
- Smith, M. 2015. *Research methods in accounting*. 3rd ed. Los Angeles: SAGE.
- South African Institute of Chartered Accountants (SAICA). 2014. *Guide on pro forma financial information*. [Online], Available: [https://www.saica.co.za/Portals/0/Technical/accounting/Guides/Revised Guide on Pro forma Financial Information.pdf](https://www.saica.co.za/Portals/0/Technical/accounting/Guides/Revised%20Guide%20on%20Pro%20forma%20Financial%20Information.pdf) [2017, May 23].

- Tharisa Plc. 2016. *SENS report - Tharisa 2016 consolidated annual results*. Johannesburg: IRESS Expert.
- UCLA Institute of Digital Research and Education. 2010. *What statistical analysis should I use ? Statistical analyses using Stata*. [Online], Available: <https://stats.idre.ucla.edu/stata/whatstat/what-statistical-analysis-should-i-usestatistical-analyses-using-stata/#kw> [2018, June 18].
- Venter, E.R., Emanuel, D. & Cahan, S.F. 2014. The value relevance of mandatory non-GAAP earnings. *Abacus*. 50(1):1–24.
- Walker, M. & Louvari, E. 2003. The determinants of voluntary disclosure of adjusted earnings per share measures by UK quoted companies. *Accounting and Business Research*. 33(4):295–309.
- Watson, S. & Rossouw, J. 2012. Jse Efficiency and Share Price Reaction To Forced Financial Restatements. *Journal of Economic and Financial Sciences*. 5(52):417–436.
- Watts, R.L. & Zimmerman, J.L. 1990. Positive accounting theory: A ten year perspective. *Accounting Review*. 65(1):131–156.
- Williams, R. 2018. *Logistic Regression Part I: Problems with the Linear Probability Model (LPM)*. [Online], Available: <https://www3.nd.edu/~rwilliam/stats2/l81.pdf%0A> [2018, June 14].
- Wooldridge, J.M. 2014. *Introduction to Econometrics*. Hampshire: Cengage Learning EMEA.
- Workforce Holdings Limited. 2017. *SENS report - Audited summarised consolidated results for the year ended 31 December 2016*. Johannesburg: IRESS Expert.
- Young, S. 2014. The drivers, consequences and policy implications of non-GAAP earnings reporting. *Accounting and Business Research*. 44(4):444–465.
- Zeff, S.A. 2007. Some obstacles to global financial reporting comparability and convergence at a high level of quality. *British Accounting Review*. 39(1):290–302.
- Zhang, H. & Zheng, L. 2011. The valuation impact of reconciling pro forma earnings to GAAP earnings. *Journal of Accounting and Economics*. 51(1–2):186–202.